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Direct-Energy Energy Return on Investment and Carbon Cost Shares for Selected Countries and the World 1960-2010

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Direct-Energy Energy Return on Investment and Carbon Cost Shares for Selected Countries and the World 1960-2010

by

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Abstract

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In this thesis I focus on $EROI_{direct}$ and carbon cost shares supplemented to global energy cost shares. This thesis builds off the work done by Maxwell (2013) and King (2015-submitted) in analyzing the potential for contemporary energy sources and carbon expenditures to reach some threshold value that acts as a constraint towards continued global economic growth. I calculate two metrics $EROI_{direct}$ and the carbon cost share from data for 44 countries and an associated 44-country 'global' aggregate for 1960-2010. I additionally calculate projected estimates for carbon cost shares for 2015-2050. I compare our results to historical $EROI_{direct+indirect}$ values for global energy sources, historical values for global energy cost shares, and estimations for expenditures for risk-aversion climate payments and abatement policies. I argue (1) that recent history suggests an increasing importance of indirect inputs re: efficiency of energy and (2) that carbon costs are relevant to the discussion of economic growth thresholds and hold the potential for a significant fraction (~1-4%) of global GDP until 2050.

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Chapter 1: Introduction

Thesis Outline

In the first chapter of this thesis I describe the relationship between energy resources, economic complexity, and economic growth. I discuss Tainter's idea of the 'energy-complexity spiral' and the possibility that the current global economy will reach a threshold for growth. I survey contemporary values for energy metrics in order to place the contemporary global economy on this energy-complexity spiral, and I then introduce the idea of carbon damages exacerbating energy spending. In the second chapter I describe our various data sources, discuss their in-built limitations and assumptions, and define calculations for $EROI_{direct}$ and carbon cost shares for the world as well as several different ways to distribute these carbon damages. In the third chapter I review and interpret our results. In the fourth chapter I place our results in the larger context of energy efficiency trends and carbon cost estimations from risk aversion or abatement policies in order to estimate the near-future value of global carbon spending. I conclude our findings in the final chapter and suggest several avenues for future research that can refine and expand the work done in this thesis.

Background

Energy and Economic Complexity

Economies are complex systems. In studying their growth and decline, some authors liken them to an organism or the evolutionary processes of organisms by virtue of analogy (Bar-Yam 1997, Brown 2011, Murphy and Hall 2011b). As an animal requires nutrients to survive and to grow, an economy requires energy to function and develop. This "metabolism" is fed by dynamic networks built into the organism or the society (veins and arteries, highways and electrical grids) (Brown 2011). Animals adapt behaviorally or physiologically to the needs placed upon them by their environment; likewise, economies respond to pressures either by restructuring or by increasing their own 'complexity,' causing increases in the amount of energy the economy requires to function (Adamides 2009, Bar-Yam 1997, Brown 2014, Tainter 1988, Tainter 2011).

Modern society is far more complex than that of the hunter-gatherers of history and we pay for that increased complexity with higher resource maintenance costs. The transition from a hunter-gatherer society to an agrarian one involved development of agriculture. The availability of crops was afforded by irrigation and human labor, or the equivalent of new 'energy' resources. The increasingly-complex quality of life offered by these separate stages of civilization is bought with increasing amounts of resource attribution (Bar-Yam 1997, Tainter 2011). In essence, the basal metabolic rate of our current society is higher as a consequence of the system it supports.

Joseph Tainter calls this relationship between societal complexity and energy use the "energy-complexity spiral." Increasing complexity calls for increasing resource (energy) use, and increased amounts of energy consumption enables the development of even more complexity. This increasing level of complexity in turn creates conflicts for the society that require their own resource allocation, as seen clearly with the introduction of fossil fuels spurring the industrial revolution and ultimately leading to issues such as climate change (Tainter 2011). This spiral is a feedback loop that Tainter says ultimately ends in diminishing returns. There are finite resources available on Earth, and so the demand for them from increasing complexity cannot be supported forever (Brown 2011 and 2014, Nekola 2013). A society should thus reach a point of complexity so great as to be unable to sustain itself, at which point it collapses. He points to the fall of Rome as one such example, where the empire's food and energy networks were unable to sustain its size (Tainter 1988 and 2011).

Energy and Economic Growth

Energy plays a fundamental role in economic growth and development (Bar-Yam 1997, Bashmakov 2007, Brown 2011, Brown 2014). The growth of human civilization was accompanied by permanent transitions in primary energy sources (Bashmakov 2007, Fouquet 2012, Grubler 2004). As patterns changed from a hunter-gatherer society to a modern industrial society, the energy base shifted from biomass (wood, peat, food and fodder) to coal, oil and gas, and now to lower-carbon energy sources (nuclear, solar, wind, tidal, geothermal, hydroelectrical). These transitions are linked to larger increases in energy consumption (Figure 1) by virtue of the rebound effect (Ayres 2005, Grubler 2004) and to periods of rapid economic growth and economic structural changes (Allen 2009, Cipolla 1962, Fouquet 2012, Fouquet 2014) as societal complexity grows in response to the input of greater amounts of energy.

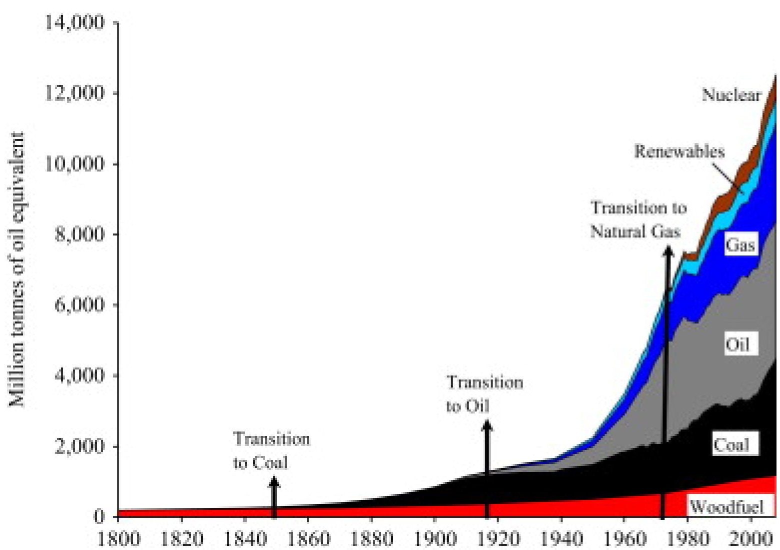


Figure 1. Global energy consumption in million tons of oil equivalent, 1800-2000. Transitions between energy sources are accompanied by increases in total energy consumption. Figure taken from Fouquet (2012) from Fouquet (2009) data.

These transitions are recorded in the profiles for energy cost shares for several countries. Energy cost shares are the ratio of expenditures on energy to national GDP. Cost shares for the U.K. (Figure 2) and Sweden dropped precipitously in congruence with transitions between energy sources (biomass to fossil fuels: coal and then oil) over the last several hundred years (Fouquet 2014, Kander and Stern 2014). U.K. energy cost shares were around ~30-40% for the years 1300-1800, and then dropped below 25% in the 1830s and fell sharply to values less than 10% through to WWI, coinciding with main energy transitions to coal and then to oil (Figure 1). Sweden experienced similar drops in cost shares and increases in energy consumption and economic growth in the 1800s and early-to-mid 1900s concomitant with a transition to coal as a primary energy source. Kander argues that without this transition there would have been almost no economic growth in Sweden over this time period (Kander and Stern 2014).

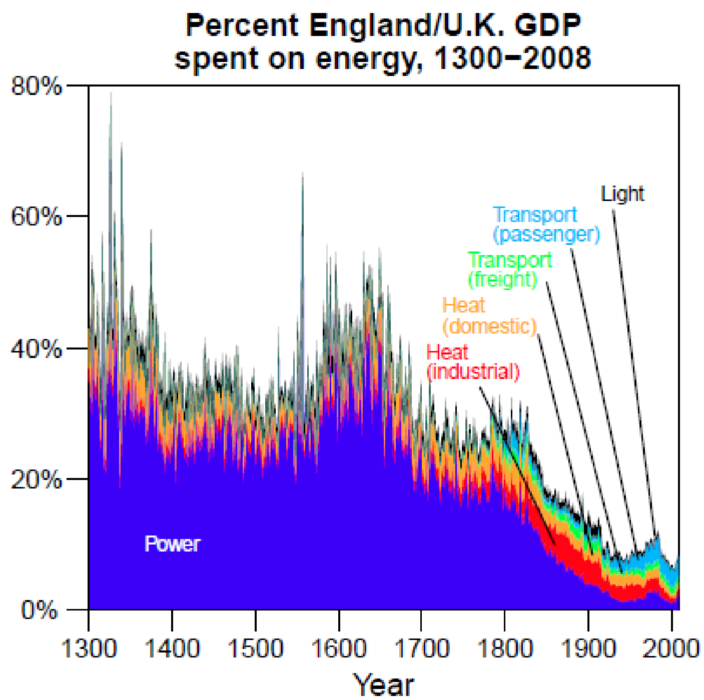


Figure 2. Energy cost shares for the U.K. for 1300-2008, by energy service. Transitions between energy sources (food and fodder -> coal (~1830) -> oil (~WWI)) are marked by sharp drops in energy cost share values. Graph taken from King, Maxwell, and Donovan (2015-submitted) from data from Fouquet (2014).

Energy as a Limiting Nutrient

To expand the analogy, I argue that energy acts similarly as a 'limiting nutrient' for economic growth. Within the frame of energy transitions and Tainter's energy-complexity spiral, energy surpluses lead to increases in resource consumption and growth, and a dearth of energy leads to an inability to maintain sustainability. The question then becomes: “Where does our global society stand on the energy-complexity spiral, and to what extent does energy as a resource act—or have the potential—to act as a limiter to global economic growth—?

Others have long discussed the problem of finite resources and the energy-complexity spiral, but in different terms. Nekola coined the phrase “Malthusian-Darwinian dynamic” to describe the combat between forces of innovation and adaptation (Darwinian or Cornucopian) and depletion (Malthusian) (Nekola 2013). Malthusians have argued, similarly to Tainter, that the growth of humanity will eventually be limited by the finite physical nature of Earth’s resources. Cornucopians (Darwinians) argue otherwise--that no such limit exists, by virtue of the human ability to innovate (Brown 2014, Nekola 2013). So far, both are correct: civilizations have collapsed as a result of Malthusian dynamics and diminishing returns on the energy-complexity spiral; similarly, human economic and population growth has continued by virtue of innovations such as the Green Revolution that have staved off Malthusian forces (Brown 2014, Nekola 2013).

However, the current threat of Malthusian dynamics is likely larger than it was in the past. Humanity has weathered the collapse of historical societies by virtue of the generally-fragmented nature of human civilization at those points in time (Nekola 2013). Today’s global society has evolved the point of nations being inextricably linked, and the struggles of a single country have the ability to effect change on a global level, as most pertinently noted with the 2008 recession (Nekola 2013).

Indeed, this recession has raised concerns about the ability for the global economy to continue its sustained growth. There are several points of concern. One is that the global economy has yet to recover fully from the 2008 crash (Brown 2014). Another is that previous Darwinian dynamics are approaching their own thresholds of diminishing returns: Tilman notes that the technologies enabling the Green Revolution are facing limitations in regards to their reliance upon fossil fuels and a decreasing return on yielded energy (Tilman et al. 2002). The Earth has already reached peak consumption for many resources other than fossil fuels, and the diminishing consumption for these in recent years is more likely a result of resource constraint than increasing efficiency of use (Brown, 2014). Oil is its own concern; most easily-exploited reserves have already been emptied, and remaining resources are increasingly scarce, difficult to exploit, and difficult to reach (Arrow et. al 2004, Guilford et. al 2011, Maxwell 2013, Murphy and Hall 2011b, Tverberg 2012). Maxwell (2013) suggests that the energy constraints in the 1970s and 1980s were a result of the contemporary sociopolitical sphere, but that the constraints in the 2000s were as a result of physical constraints, i.e. larger energy demands requiring a use of lower-quality energy sources.

As for energy, in general, per capita energy consumption scales at a ¾ power to GDP growth (Brown, 2014). The energy surplus brought about by the transition to higher quality sources (e.g. coal, oil, and gas) encourages increased amounts of consumption alongside transitions to higher complexity in a manifestation of the rebound effect (Ayres 2005, Boulding 1959, Fouquet 2014, Tainter 2011). However, humanity as a whole has rarely existed in a state of surplus energy (Boulding 1959), and transitions to higher-quality energy sources do not decrease consumption. Figure 1 shows historical energy consumption by source alongside transitions between major energy sources and introduction of new ones. Absolute consumption of all sources continues to increase alongside transition boundaries (Fouquet, 2012). For this reason, Fouquet (2012) argues that a shift towards lower-carbon energy might not guarantee a reduction in consumption of fossil fuel sources and may instead just further increase energy demand.

The historical trend of ever-increasing energy consumption in a world of energy surpluses likely cannot continue to exist. Malthusian restraints must “ultimately occur,” (Brown,

2014) and so the global society must eventually approach diminishing returns on sustainability. If we evaluate energy as a limiting nutrient, it can restrict growth in one of three ways:

1. **The total amount of energy needed to sustain the civilization** (i.e. the "metabolism"). If this amount is greater than what exists in natural stocks, the society cannot sustain itself. This is a limitation on finite resources, i.e. the Malthusian argument of finite resources.
2. **The rate at which the civilization can extract energy**. If this rate is insufficient, regardless of the total amount of energy available in reserves, the society cannot sustain itself. This is a limitation of technological efficiency and ability, i.e. a restraint on Darwinian/Cornucopian dynamics.
3. **The cost of energy**. If the resources the society puts in to produce its energy are too great, it lacks resources to divert elsewhere to other necessary processes. The resources used for affordability can be energy itself, e.g. energy in versus energy out, as well as others (capital, labor, natural resources like certain minerals, etc.) This is a limitation on both Malthusian and Darwinian dynamics (natural resources directly and indirectly put towards production of energy and technological efficiency reducing these amounts).

Studying Diminishing Returns with Energy Return on Investment (EROI)

For this thesis I look primarily at the third constraint, e.g. energy affordability, to study the question of diminishing returns on the energy-complexity spiral in the recent history and near future. I look at two energy metrics: the net energy metric energy return on investment (EROI) and the cost share of energy $fGDP_e$.

Net energy analysis compares the quantity of energy delivered to society by an energy system with the energy (direct and indirect) used in the production of that energy (Cleveland 1992). Direct energy is that fuel used directly in extracting or producing a unit of energy. Indirect energy is energy used elsewhere to produce the goods used to extract or produce that energy, e.g. energy used to create an oil rig. EROI is a dimensionless value that measures the ratio of energy produced to energy (indirect and direct) consumed in the production of a unit of that energy. It measures energy quality; all other things being equal, the energy source with a higher EROI is a more productive source of energy (King 2010). It thus allows for a ranking of different kinds of energy sources, and studying EROI values over time allows for understanding changes in production efficiencies (Cleveland 2013, King 2010). In a single fuel source, the study of EROI values over time can help us interpret the effects of depletion (lowering EROI) and innovation (increasing EROI).

Tainter suggests that at some point, all civilizations reach a point where the energy-complexity spiral reaches diminishing returns. At this point, it cannot produce sufficient energy with its contemporary fuel sources to support its society, and it must turn to increasingly efficient resources to sustain itself (Tainter 1988 and 2011). In the terms of net energy, at some point the EROI of a society's fuel sources should decrease by virtue of depletion, to a point where other, higher-EROI fuel sources need to be adopted to maintain levels of energy consumption.

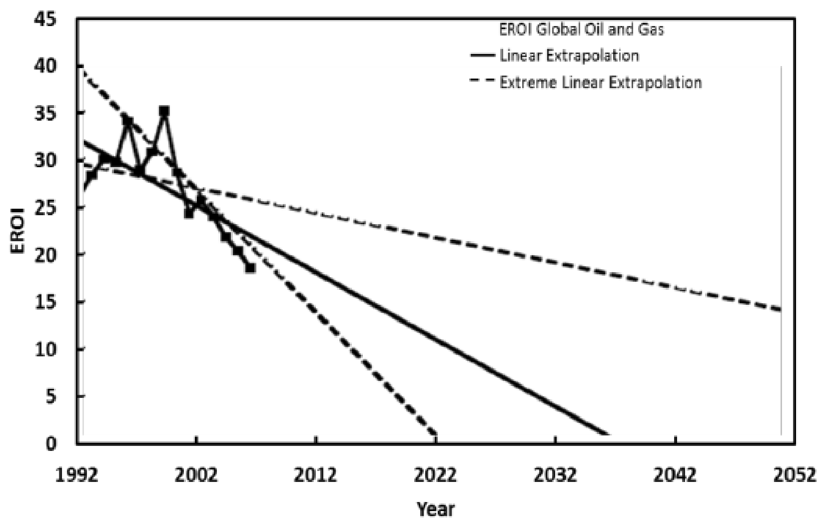


Figure 3. Energy Return on Investment (EROI) for global oil and gas for 1992-2007. Decline of future (2007+) values for global oil and gas EROI are bounded by two extreme linear extrapolations in dashed lines. At the earliest, global oil and gas EROI could reach a 1:1 value by 2022. Figure taken from Gupta (2011) from data from Gagnon, Brinket, and Hall (2009).

The EROI for oil and gas for the United States and the world has declined in the past ~50 years. EROI for production for oil and gas in the U.S. declined to 11:1 in the mid-to-late 2000s from 17:1 between 1968-2002 (Guilford et al. 2011). EROI for global oil and gas was 26:1 in

1992, 35:1 in 1999, and 18:1 in 2006, showing a similar trend (Gupta 2011). Gupta linearly extrapolates this decreasing global trend to the possibility of EROI for conventional oil and gas reaching a 1:1 ratio as soon as 2022 (Figure 3). However, the 'uselessness' threshold is not necessarily that low: Murphy and Hall estimate the limit for usefulness for transportation fuels at 3:1 (Murphy and Hall 2011a); King and Hall suggest that oil may become prohibitively expensive to produce anywhere near 4:1-5:1 and 1:1 (King and Hall 2011).

The decreasing EROI of oil and gas would not be too overwhelming an issue if it were not for the fact that its replacement fuels are nowhere near as energetically efficient. A study by Gupta (2011) of varying EROI estimations for different 'replacement' fuel sources gave tar sands at 5-6:1 and shale oil at 3-4:1. The fuels with which we seek to replace oil and gas are nowhere near what they should be to act as complete replacements.

Energy Cost Shares and Carbon

Global energy cost shares tell us a similar story. I discussed the U.K and Sweden energy cost shares with regards to their energy transitions earlier in the introduction. Today global energy cost shares are normally around 5-8% of GDP (King 2015-submitted, Maxwell 2013). King (2015) and Maxwell (2013) correlate peaks in global energy cost share values with times of extremely high expenditures on crude oil and concomitant periods of economic slowdown, suggest that a threshold energy cost share value exists with regards to growth retardation (Maxwell 2013), and argue that the point of cheapest energy occurred around 2000 (King 2015-submitted). There is potential for these global values to increase alongside the contraction of cheap, high-quality oil and gas resources and the shift towards the establishment of lower carbon renewable energy sources.

Carbon is its own problem with regards to global economic growth. The era of surplus energy introduced by fossil fuels allowed for large strides in economic growth contemporary with large emissions of CO_2 to the atmosphere. Climate change is an issue on the global stage; the Kyoto Protocol and later Copenhagen accord are evidence of major emitters and others taking note of the potential for irreversible global damages from high emissions and atmospheric CO_2 concentrations. However, many abatement policies put forward to stabilize atmospheric concentrations or shift towards lower carbon energy sources require, among other things, carbon emission decreases at rates of ~3-4% per year (Loftus et. al 2015), while historical emission reductions above 1% have been linked to economic slowdown (Anderson and Bows 2011, Stern 2006).

While spending money to reduce carbon emissions (abatement) has the potential to limit growth, there also exists the possibility for meeting growth thresholds in regards to continuation of "business as usual" emission practices. Carbon damages are currency amounts estimated as the equivalent cost inflicted on GDP as a result of climate change and increasing temperatures. Taken to a catastrophic extreme, runaway climate change could theoretically result in damages greater than global GDP. At smaller scales, carbon damages still have the potential to be a large percentage of global GDP. The question I ask in this thesis is whether the cost of *not* pursuing abatement policies inflicts a similar cost to global energy expenditures.

This Work

In this thesis I pursue the question of diminishing returns on the energy-complexity spiral with regards to global economic growth. I study energy 'affordability' over the recent history and near future with an eye towards EROI and the global energy cost share, with some differences.

EROI is based upon the indirect and direct energy costs of a fuel source and allows for ranking by source quality. Since EROI calculations involve specific data with regards to both indirect and direct inputs, EROI measurements are usually in the form of a specific energy source for a specific country, e.g. $EROI_{U.S., oil and gas}$. In order to understand the global state of energy production efficiency, I instead look at $EROI_{direct}$ for 44 nations and the world. $EROI_{direct}$ measures the EROI of a fuel source ignoring indirect energy inputs. The resulting value should thus inform us as to whether depletion forces are subsuming growths in technological efficiency. By calculating the sum total of direct energy production and the total of direct energy inputs for our countries and the world, I look at the direct efficiency of a nation's energy industry in producing energy, and I treat countries and the globe each as energy sources unto themselves.

I follow our $EROI_{direct}$ analysis with a look at energy cost shares internalizing expenditures for CO_2 damages for 2010. I project these estimations and separate 'carbon cost shares' into the near future with a selection of GDP and CO_2 emission growth scenarios to understand the possible range of carbon damages on global GDP.

Chapter 2: Methodology

2.1 DESCRIPTION OF DATA SOURCES

This thesis involves three primary groups of calculations: the physical net energy metric $EROI_{direct}$, the cost share of energy $fGDP_e$ and its associated 'carbon' cost share $fGDP_{CO2}$, and annual global CO_2 damages estimated from various social cost of carbon (SCC) values. In this immediate section I describe the data sources for each calculation type.

2.1.1 $EROI_{direct}$

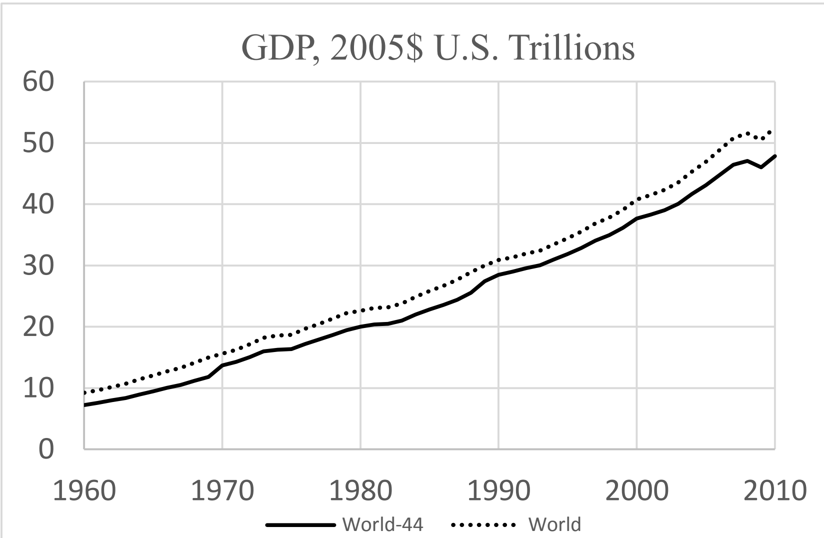
Data for the calculation of $EROI_{direct}$ come from the IEA Online Data Services. For calculation I use two flows: Production and Energy Industry Own Use (EIOU) available in units of kt, TJ-Gross, or GWh. I also use energy density (kJ/kt) average net calorific value conversion factors. These flows are used for 44 countries for the years 1960-2010. EIOU is defined by the IEA as the:

> amount of fuels used by the energy producing industries (e.g. for heating, lighting and operation of all equipment used in the extraction process, for traction and for distribution). It includes energy consumed by energy industries for heating, pumping, traction and lighting purposes (IEA World Energy Statistics 2014).

Essentially, EIOU is the direct energy used by the energy industry in the production of energy, and I use it as the direct energy input in calculating $EROI_{direct}$. I divide energy sources into two types: primary and secondary. Primary energy sources consist of Coal (broken into two general aggregates and five specific sub-types), natural gas (NG), crude oil (aggregated with natural gas liquids (NGL) and feedstocks pre-1971), and renewables (nuclear; hydro; geothermal; solar; tide, wave, and ocean; and wind). Secondary energy sources include biofuels and waste[1], coal gases, peat and peat products, oil shale, refinery feedstocks, and oil products. A comprehensive list of all individual primary and secondary energy sources used is available in Appendix 1, and

[1] Though biofuels/biomass could easily be considered a primary energy source, many countries lack data for these fuels, and the accuracy of those numbers that do exist is questionable. For more detail, see Data Limitations and Assumptions.

corresponding definitions of each of these source flows is available in the IEA World Energy Statistics Manual (2014).



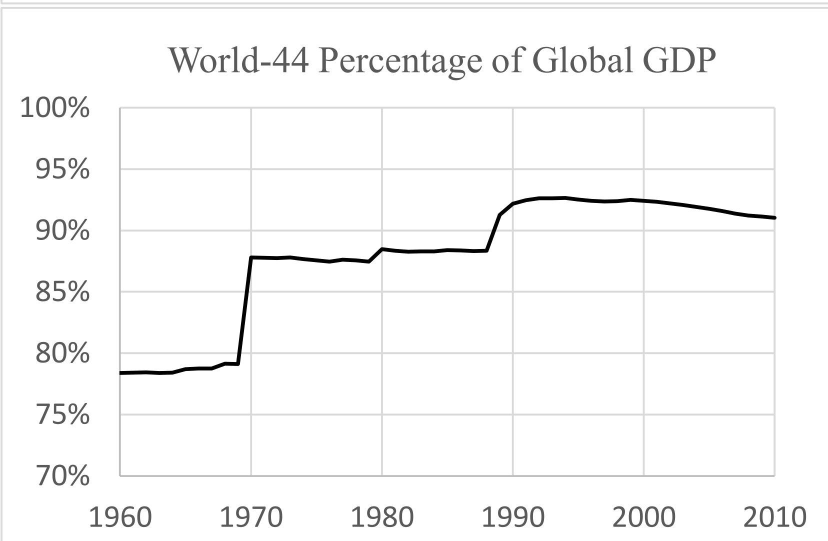


Figure 4. Percent of global GDP explained by our world-44 aggregate (top), and corresponding GDP values in 2005$

These data for 1960-2010 break down into two sets: 1960-2010 for 26 OECD countries, and 1990-2010 for the same 26 OECD nations and an additional 18 non-OECD countries. A list of the countries in each of the two sets is available in Appendix 1. These 44 countries in total comprise approximately 80%-90% (92% in 2010) of world GDP as compared to World Bank data from 1960-2010 (Figure 4) and 89%-93% of the IEA's listed Total Primary Energy Supply (TPES) from 1978-2010 (Figure 5) for consumption (King, 2015-submitted). Production for a country is not equal to its TPES amount.

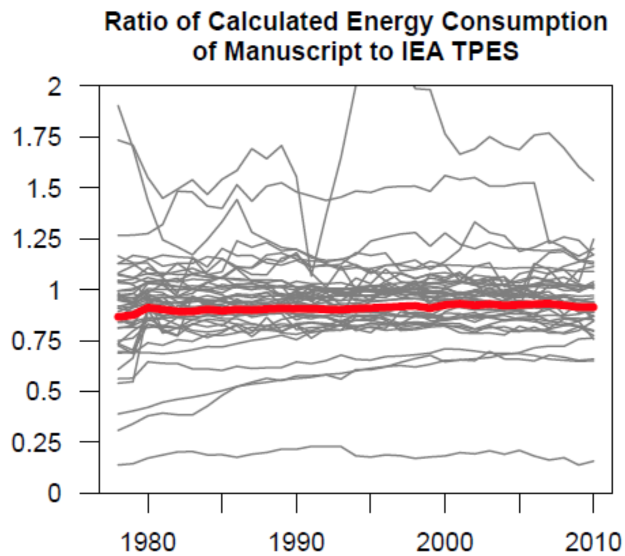


Figure 5. Total energy consumption calculated by King (2015-submitted) divided by total primary energy supply (TPES) as supplied by IEA data for 44 countries. The World-44 aggregate (red line) ranges from a minimum of 89% (1980) to a maximum of 93% (2007). Figure from King (2015-submitted) supplemental, Figure S6.

2.1.2. *FGDP$_e$*

I take values for the cost share of energy $fGDP_e$ for use in the calculation and comparison with $fGDP_{CO2}$, $fGDP_{e+CO2}$ for all 44 countries and the world-44 aggregate from the "$fGDP_e$ estimated" set of calculations from King (2015-submitted) and Maxwell (2013). King and Maxwell calculate $fGDP_e$ for a country or the world as the ratio of energy expenditures to GDP

$$fGDP_e = \frac{energy\ expenditures}{GDP} = \frac{\sum_{n-1}^{9} p_n c_n}{GDP}$$

With expenditures equal to the sum of price (p_n) times consumption (c_n) across nine total sectors for natural gas and coal (industrial, electrical, and residential), electricity (industrial and residential), and oil (King 2015-submitted, Maxwell 2013). These values differ slightly from those data available from the IEA. $fGDP_{e,estimated}$ is slightly larger than $fGDP_{e,actual}$ in most years (Figure 6), where 'actual' data uses only actual price data from the IEA. For a detailed description of the calculation and estimation methods used in creating a $fGDP_e$ value, please see Maxwell's work (2013) and the report and supplemental materials of King (2015-submitted).

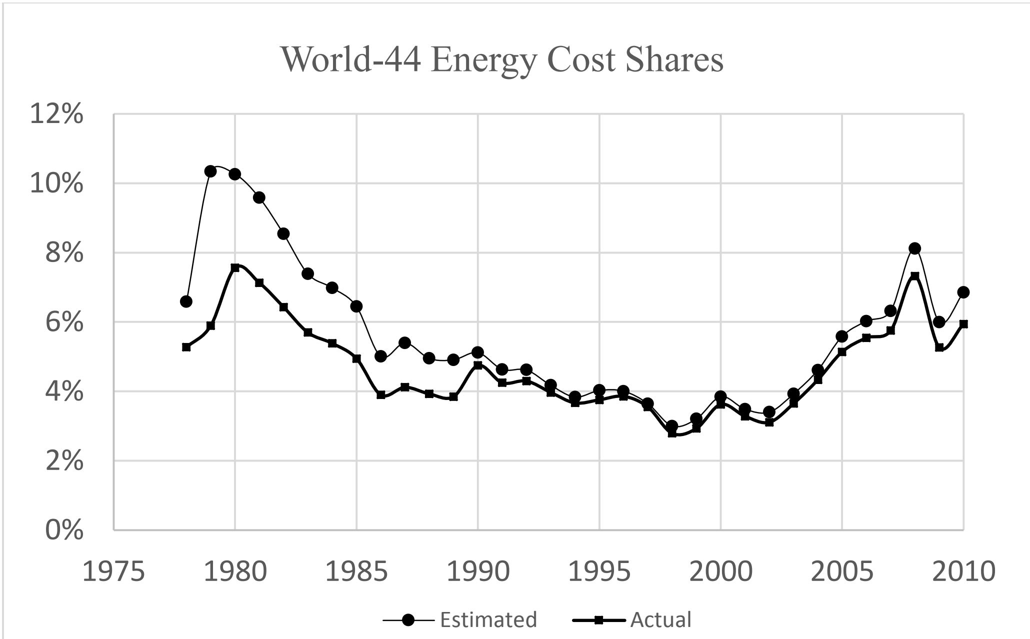


Figure 6. Global energy cost shares for "actual" and "estimated" sets. The estimated set includes additional data estimated when values for prices were missing for a given country or year from available IEA data. Differences between the sets are significant for the 1978-1990 time period and decrease thereafter. Energy cost share values are taken from King (2015-submitted) and Maxwell (2013).

Though this energy cost share estimation is based on the same 44-country aggregate I use for our $EROI_{direct}$ estimation, I argue that it acts as a viable representation for the world as a whole. These countries comprise the majority of the world's GDP and energy consumption, and Maxwell (2013) further estimates that the inclusion of the remaining ~150 countries would change $fGDP_e$ values by only around 1%. I use these facts to argue that our results for $EROI_{direct}$ and any comparisons to $fGDP_e$ should thus be representative of 'true' global trends over our relevant time-spans.

2.1.3 CO_2 Damages

I use a range of social cost of carbon values for the estimation of global carbon damages. These values are taken from three studies and cover a range of integrated assessment models

(IAMs), discount rate values, discount rate approaches[2], climate simulations, and final SCC values.

SCC name	Value, 2005$ U.S/ metric ton CO_2	Source	IAM	Discount Rate	Discount Rate Approach
5%	$10.36	U.S. Interagency Working Group, 2013	PAGE 2009 FUND 3.8, 2012 DICE, 2010	5%	Both- Model Dependent
3%	$34.85	"	"	3%	
2.5%	$53.69	"	"	2.5%	
Stern	$126.79	Nordhaus (2013), Stern (2006)	DICE 2013-R, from PAGE	0.1%*	Prescriptiv e
Nordhaus	$11.63	Nordhaus (2011)	RICE-2011	1.5%*	Descriptive

Table 1. Summary information for all social cost of carbon (SCC) values used in calculation of the range of carbon damages and carbon cost shares. "SCC name" lists the in-text names I refer to each SCC by. Source and IAM list the paper and integrated assessment model these values are derived from; Discount Rate and Discount Rate Approach list the relevant discount rates and approach—prescriptive or descriptive—used by the modeler in calculation of the relevant SCC value.

I use three values from the 2013 U.S. Interagency Working Group Report at their discount rates of 5%, 3%, and 2.5%. These values are based on a collection of analyses from a distribution of scenarios run with the PAGE 2009 (Hope 2011), FUND 3.8 (Anthoff and Tol 2013), and DICE 2010 (Nordhaus 2010) IAMs. I use one value from Nordhaus' RICE-2011 model using a 1.5% discount rate (Nordhaus 2011a), and I use one value from Nordhaus' 2013 DICE-R model mimicking climate and model structure for an estimation of SCC from "Stern Review" parameters (Nordhaus 2013, Stern 2006). I also back-calculate a SCC value by using

[2] The selection of a discount rate value and the approach in which the modeler takes towards estimation of a discount rate (ethical or observable) both have huge impacts on the resulting estimation of the value of the SCC. I describe the general problem in Data Limitations and Assumptions, but examples of the effect of discount rate value and type approach can be found in Nordhaus (2011, 2013) and Pindyck (2013).

the recommendation of the Stern Review for a 1% of global GDP spending target (Stern 2006). Table 1 above has a summary of all SCCs I use in calculation for 1980-2010 damage values. All of these values are in 2005$ U.S. / metric ton CO_2 and have been converted to that unit when required, from ton C or some other $-yr. I discuss the implications of using a one-year specific SCC value for multiple years in the Calculations section.

2.1.3.a Historical and Future CO_2 and GDP Data

As I mention in 2.1.1, all GDP data is in constant 2005$ U.S. from the World Bank. I use historical annual CO_2 emission data in million metric tons to calculate CO_2 damages, and I take the values from IEA statistic indicators available online.

Our world-44 aggregate is less representative of CO_2 emissions than GDP or TPES. These 44 countries compose a high of ~87% of total global CO_2 emissions in 2010 and become increasingly representative of world emission figures over time (Figure 7). For this reason, I focus the results and discussion of our damage estimations on data for the most recent year (2010).

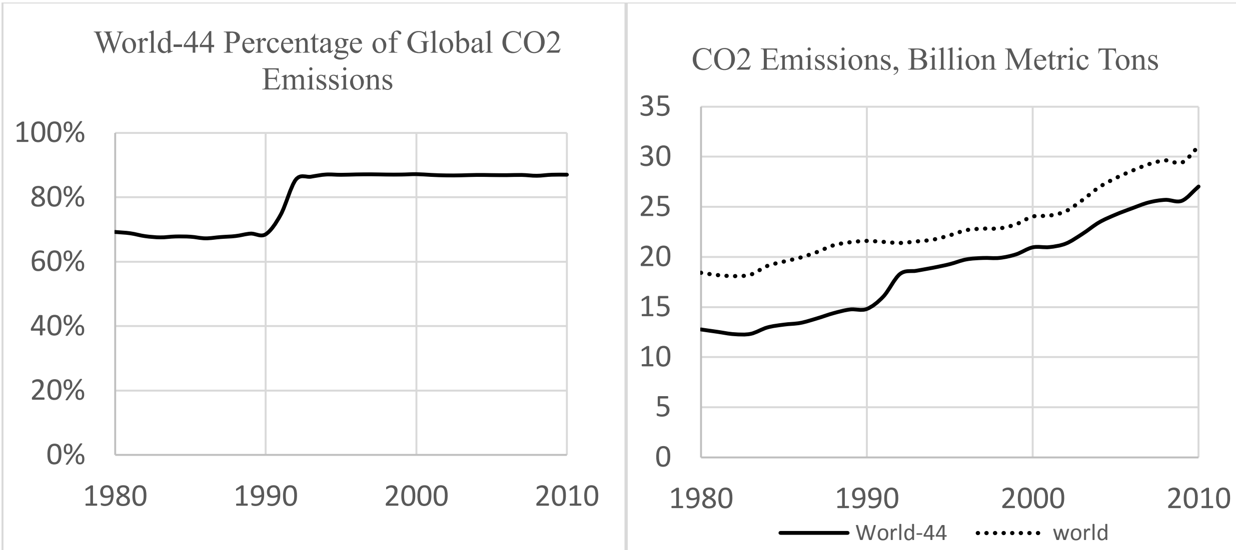


Figure 7. Percent of global CO_2 emissions explained by our World-44 dataset (left) and corresponding total annual emissions in billion metric tons for world-44 and the world (right) for 1980-2010. The World-44 set accounts for 87% of global CO_2 emissions from 1994 onwards.

I use five scenarios for the purpose of calculating projected future CO_2 damages and $fGDP_{CO2}$ values. I use one scenario under a "business-as-usual" (BAU) model assuming an extrapolation of current trends. For this scenario, I take CO_2 emissions in gigatons for 2015-2050 from the IEA 2014 Energy Technology Perspectives 6C scenario. I take GDP growth rates from the 2012 OECD Economic Outlook. I then use four non-BAU scenarios to cover a range of possible social and economic outlooks to 2050. I take four GDP and CO_2 emissions projections from 2015-2050 from the four IPCC marker scenarios A1-AIM, A2-ASF, B1-IMG, and B2-MSG. These data are available from the IPCC Distribution Center online. Detailed descriptions of the models and their parameters are available in the IEA Perspectives and IPCC SRES reports.

These five scenarios cover a range of future socio-economic possibilities and include a BAU future that continues forward from current trends, and they offer a comprehensive range of possible values for global CO_2 and GDP levels in 2050. I justify the use of the BAU scenario as a base-case model. I justify the use of the IPCC marker scenarios as appropriate because general scenario estimations by the IPCC have been and continue to be used as basis for further study, commentary, and policy decisions by economists, climate scientists, and governments. I note that all projections make estimates for the whole world, and not for our world-44 dataset.

2.2 CALCULATIONS

2.2.1 EROI$_{direct}$

I calculate annual total energy production and EIOU in TJ for the all 44 countries for the years 1960-2010:

$$\text{Energy Production}_{country} \text{ or } EIOU_{country} = \sum \text{quantity}_{source}[\frac{kt}{yr}] \times \text{energy density}_{source}[\frac{TJ}{kt}] \qquad (1)$$

Where *source* for Production equals crude oil, NGL, NG, coal, and renewables (nuclear, solar, hydro and pumped hydro, wind, geothermal, and tide). *Source* for EIOU includes the aforementioned in addition to secondary energy sources. While I make no attempt to estimate production or EIOU values for countries or years with missing data, I do estimate missing conversion factors for countries and years with corresponding production/EIOU quantities. A list of missing data points for production or EIOU for individual countries is attached in Appendix 1. A detailed list of primary and secondary energy sources, source-specific calculation methods (e.g. total production for Coal from its seven sub-types), and year-and-country-specific information are additionally attached in Appendix 1.

I then calculate EROI$_{direct}$ for each country as the ratio between Production and EIOU:

$$EROI_{country} = \frac{Energy\ Production_{country}}{EIOU_{country}} \qquad (2)$$

I calculate two weighted world-44 average EROI$_{direct}$ values for the timespans of 1960-1989 and 1990-2010 in allowance of the addition of multiple non-OECD countries beginning in 1990. I estimate this EROI$_{direct,world}$ value by weighting for total energy production so that high-EROI, low-production nations have less impact on the global value:

$$EROI_{world} = \frac{\sum[\text{Energy Production}_{country} \times EROI_{country}]}{\sum \text{Energy Production}_{country}} \quad (3)$$

2.2.2 CO_2 Damages and Taxes

I calculate a range of possible global CO_2 damages from historical emission amounts and the five SCC values chosen earlier. Global CO_2 damages are calculated in order to reach an understanding of how internalization of CO_2 emissions into energy costs affects present global energy cost shares. I calculate individual tax regimes as an academic exercise in how the variable distribution of this global damage in turn affects $fGDP_{e+CO2}$ values for individual nations. This exercise is not intended to have any normative value attached.

I standardize any SCC values not in constant 2005$ U.S./ ton CO_2 to that unit by using a ratio of 3.67 ton CO_2 per ton C where applicable. I adjust non-2005$ to that value by using CPI data available from the Bureau of Labor Statistics to adjust for inflation or deflation.

I calculate global CO_2 damages for the world-44 set and for the world for every year *t* between 1980-2010 for each of the five SCC values (Table 1):

$$Damage_{world,SCC,t} = CO_2\ emissions\,\frac{ton}{yr} * SCC\,\frac{\$}{ton\ CO2} \quad (4)$$

I do not discount these values backwards in time. SCC_{Stern} for the world for 2010 (2005$ U.S. $127/metric ton CO_2) is the same value I apply towards calculating damages for the world in 1980. I hesitate to discount backwards in time because SCC estimations *forwards* in time rely upon cumulative atmospheric CO_2 concentration levels, model-specific climate parameters, and general damage functions in addition to discount rate considerations. Table 2 has a listing of Stern and U.S. 5% SCC values for 2015-2050 in 5-year steps, taken from the model sources (U.S. Interagency Working Group 2013, Nordhaus 2013). The SCC value for the Stern SCC value increases from \$127 to \$144 from 2015-2020. Application of only the discount rate to the 2015 value raises the SCC value from \$127 to only \$136 in the same time frame. Applying only the discount rate backwards in time thus overvalues the SCC. I choose instead not to change the value backwards in time at all, and so each calculation for 1980-2010 is roughly equivalent to the damages incurred if the emissions for a year occurred in 2010. As this is a fairly large weakness, I focus mainly on 2010 values followed by future projections.

Year	**Stern**	**5%**
2015	\$127	\$10
2020	\$144	\$11
2025	\$162	\$13
2030	\$182	\$15
2035	\$202	\$18
2040	\$223	\$20
2045	\$245	\$23
2050	\$268	\$24

Table 2. SCC values for 2005\$ U.S / metric ton CO_2, 2015-2050, in five-year increments for the Stern and U.S. 5% SCC estimations, rounded to the nearest dollar. Values are taken from Nordhaus (2013) DICE-R Estimations for Stern model parameters (Stern) and from the U.S. Interagency Working Group (2013) (5%).

I calculate the new cost share of energy and CO_2 for the world $fGDP_{e+CO2}$ as

$$fGDP_{e+CO2,SCC,w} = \frac{\sum(energy\ expenditures_w)*GDP_w+Damage_w}{GDPw} \quad (5)$$

This metric internalizes the CO_2 damage as an energy expenditure. I can also calculate the carbon cost share $fGDP_{CO2}$ for countries or the world as the ratio of CO_2 damages to GDP:

$$fGDP_{CO2} = \frac{CO2\ Damage}{GDP} \quad (6)$$

I then calculate four ‘taxes’ for the intent of distributing the payment of these damages, resulting in 20 combinations of SCC values and tax types. Each tax type has, in addition, a corresponding damage tax in 2005\$ U.S. billions and $fGDP_{e+CO2}$ value for all of the 44 countries. The detailed tables for world tax values and energy and carbon cost shares for all SCC values, tax regimes, and countries is available in Appendix 2. Damage for a particular country for the next four sections refers to the amount of the global damage applied to a specific country for climate mitigation of that damage.

2.2.2.1 Flat Tax

I calculate the flat tax for each country identically in manner to how I calculate the world damages in Eqn. 4, i.e. damage (CO_2 emissions * SCC) = flat tax for a specific country. I design this tax to assign the burden of the damages proportionately to culpability for emissions.

2.2.2.2 GDPPC Tax

I calculate the GDP per capita tax for each country so that the burden of damages is proportionately higher for richer nations. I calculate this tax linearly so that the lowest amount of payment for damages is assigned to the country with the lowest GDPPC (in our case, Nigeria). Damage amounts for all other countries are a multiple of the tax value for the lowest GDPPC nation:

$$Damage_{country} = \frac{GDPPC_{Country}}{GDPPC_{Nigeria}} * Damage_{Nigeria} \quad (7)$$

Where damage payments for Nigeria are calculated as

$$Damage_{Nigeria} = \frac{Damage_{world}}{\sum_1^{44} \frac{GDPPC_{country}}{GDPPC_{Nigeria}}} \quad (8)$$

Such that the total damage payment equals the global damage for any given year and SCC value.

2.2.2.3 GDP Tax

I calculate the GDP tax such that I distribute global CO_2 damages proportionately to a country's GDP:

$$Damage_{country} = \frac{GDP_{country}}{GDP_{world}} * Damage_{world} \quad (9)$$

With the effect of increasing all country's energy cost shares by an identical amount. I design this distribution with the intent of managing the change in global energy cost share in one of two ways. In this way, I assign all countries a tax damage such that their carbon cost share increase is identical.

2.2.2.4 Balance Tax

I calculate the balance tax in a different way of distributing the global cost share such that all nations end up with a $fGDP_{e+CO2} = fGDP_{e+CO2,world}$:

$$Damage_{balance} = \left(fGDP_{e+CO2,world} - fGDP_{e,country}\right) * GDP_{country} \quad (10)$$

I design this and the GDP tax with the idea that 'affordability' of energy lies within the sphere of energy cost shares, i.e. the relationship between total GDP and total capital spent on energy annually, as discussed in the introduction. With this distribution type, I assign damages so that $fGDP_{CO2}$ differs for all nations but the resulting $fGDP_{e+CO2}$ is identical to the global value.

2.2.3 Projections

I calculate CO_2 damages and CO_2/GDP fraction projections for two SCC values (Stern and 5% (Table 1)) for five scenarios for GDP and CO_2 emissions growth for 2015-2050. I estimate these damages to see the range and growth of possible future CO_2/GDP values and to compare these numbers to our results for 2010.

I calculate damages in 2005$ U.S. billions for 2015-2050 in 5-year increments for our two bounding (highest and lowest) SCC values and our five scenarios as I do in 2.2.2, Eqn 4. The damages I calculate are year-appropriate such that the SCC values for time *t* change (Table 2). I calculate the carbon cost share $fGDP_{CO2}$ for the world as I do in 2.2.2, Eqn. 6. Note that these projection values correspond to future estimates for the world as a whole and not for the world-44 aggregate, while I can calculate 2010 values for both world-44 and the globe.

2.3 DATA LIMITATIONS AND ASSUMPTIONS

I intend for this section to be a discussion of the limitations built into the data I use for this thesis, as well as of the assumptions I extrapolate from them to use for interpretations of our results.

2.3.1 $\mathbf{EROI_{direct}}$ and $\boldsymbol{fGDP_e}$

I calculate $EROI_{direct}$ from production and EIOU data taken from the IEA. The primary limitations for this calculation are data availability and data veracity. I are firstly limited to only 44 countries, and time series for only 26 of these reach back to 1960. Secondly, the accuracy and precision of these data are subject to various uncertainties.

The IEA receives these data, when possible, as self-reported values from nations. Issues in data reporting arise from a combination including, but not limited to: national statistics centers mislabeling data flows; national data centers refraining from publishing data due to confidentiality issues; breaks in time series arising as a result from methodologies for reporting or gathering information changing; and historical revisions for some years by the nations or by the IEA itself. Historical values for biofuel and waste are themselves particularly suspect due to many of the data points being derived from local surveys described by the IEA as "irregular" and "irreconcilable." In places where data are absent or estimations are suspect, the IEA Secretariat will calculate its own values for products and flows, including numbers for oil, natural gas, and coal where necessary—all numbers I use as primary sources for calculation of Production and EIOU values.

The "Country Notes and Sources" section of the IEA World Energy Statistics Manual (2014) has absolutely thorough by-source, by-flow, and by-country documentation with regards to suspect data time series, values, revisions, and IEA Estimations.

Limitations for the energy cost share data set are similar, as calculations for expenditures were completed from available IEA consumption and price data, and estimated by King (2015) and Maxwell (2013) where not present. I re-iterate that the energy cost share data set I use for our analysis is the "estimated" value including price values estimated by King and Maxwell resulting in a higher energy cost share than that calculated only from actual data available from the IEA (see Figure 2 again for comparison). The primary difference in the "estimated" cost shares relative to the "actual" is that "estimated" values substitute prices (e.g., \$/MJ of natural gas) for years and countries that list no price. The assumption is that a reasonable (e.g., regional) non-zero price is more realistic than zero.

I repeat that our 44-country dataset for both $EROI_{direct}$ and $fGDP_e$ data comprises ~90% of world GDP, ~80% of world TPES, and ~99% of actual world $fGDP_e$ as compared to data available from the World Bank and the IEA. Thus, while I are limited in numbers to analysis of only these 44 countries, I can reasonably assume that this 44-country set is representative of global values and trends, and that I can interpret behavior of the 44-country aggregate as indicative of historical trends and continuous with our calculations for projections of global damage and cost share values.

2.3.2 Damages, SCC values, and IAMs

I would be especially remiss if I failed to include a discussion on the myriad assumptions and limitations inherent in both all IAMs and all estimations of SCC values.

I choose our SCC values to hopefully reflect a cross-section of existing SCC estimations. I include "optimistic" low values (U.S. 5%, Nordhaus) and "pessimistic" (Stern Review) values along with intermediate (U.S. 3%, 2.5%) amounts that cover IAMs built with multiple discount rates, discount rate approaches, model types and parameters.

I nonetheless must qualify that I make no attempt to argue the correctness of these values. Estimation of SCCs from IAMs is an inherently flawed process, and I intend this following discussion as a cautionary description. While I may be able to make an educated 'guess' as to the possible range of SCC values for the purpose of calculating damages, I must be clear in saying that these ranges are essentially just that – guesses. All that I can both accurately and precisely say about the 'true' value of the social cost of carbon is that it exists, it is non-zero, and it is positive (Litterman 2013, Pindyck 2013). Since calculating a damage value without an actual number would be, frankly, difficult, I are placed with the burden of selecting and justifying some number(s) to use.

Pindyck (2013) makes a comprehensive argument as to the failings of IAMs in assessing the SCC value. There are two primary limitations inherent in all IAMs: structure of the damage function L(T) and selection of the appropriate discount rate (Murphy 2013, Nordhaus 2006 and 2013, Pindyck 2013) . The resulting SCC value varies greatly with a change in either of these. I summarize his argument below.

The loss function L(T) is meant to describe how GDP decreases as temperature increases, and it is defined by the modeler. Generally loss functions are modeled so that GDP at any given year *t* is $GDP_t = L(T_t)*GDP'_t$, or the calculated loss modifier multiplied by the GDP assuming no loss at all (GDP'_t). Nordhaus (2006) structures it as an inverse quadratic function ($L \approx 1/T^2$) ; Weitzman (2009) uses an exponential quadratic function ($L \approx \exp(T^2)$). Neither Nordhaus nor Weitzman structures their L(T) function based on empirical evidence or any economic theory; as Pindyck (2013) quite bluntly states, L(T) is a function that, at its heart, is utterly arbitrary. Even the guideline estimations by the IPCC suggesting a ~1-4% global GDP loss concomitant with a 4°C increase in temperature are taken from surveys of other IAMs (IPCC 2007a,b,c). What evidence exists suggests that GDP growth rather than GDP itself suffers as a result of increasing T (Bansal and Ochoa 2011, Dell, Jones and Olken 2012, Stokey 1998). Finally, L(T) is useless in scenarios describing catastrophic--7°C+--temperature changes (Pindyck 2013, Pindyck and Wang 2013). DICE by Nordhaus is standardized at a 2.5°C increase, and many other models reach an upper limit near a 5°C forecast (Pindyck 2013). Ultimately, then, high-damage, low-probability 'catastrophic' outcomes are unable to be forecasted by IAMs, and so SCC estimation is likely greatly undervalued (Pindyck and Wang 2013). Further, these low-probability outcomes are not exceedingly unlikely: IPCC estimations suggest a ~17% probability of a temperature increase greater than 4.5°C by 2100, and a 5% chance of a 7°C increase (IPCC 2007b), later adjusted upwards by Weitzman (2009) to be more likely ~10%.

Discount rate is the second major issue inherent in SCC estimation (Murphy 2013, Nordhaus 2011b, Pindyck 2013). Most IAMs (and all the ones I use for our SCC values) approach the discount rate with the Ramsay equation:

$$r = \rho + \alpha g$$

Where r = real rate of return (discount rate on goods), g = constant growth rate of consumption across generations, ρ = pure rate of social time preference (PRSP), which Nordhaus describes as the "generational discount rate" (Nordhaus 2011b), and α = elasticity with regards to generational consumption. r is observable and generally varies between 6%-20% depending on what country and time period is being looked at (Nordhaus 2011b). ρ is unobservable and describes how the modeler should value the economic welfare of this generation versus future generations; ρ=0% suggests the two are equal, and a negative value suggests future generations are worth more (Nordhaus 2011b). These are the two primary parameters.

The problem arises when the modeler chooses one of two approaches towards estimating the discount rate: the prescriptive approach, where they argue for values of ρ and α and then derive an 'ethical' value for r, or the descriptive approach, where they use observable values of r and g to derive values for ρ and α. These two approaches differ primarily in their approach to discount rate: the prescriptive approach argues for an ethical stance towards describing r and the descriptive approach makes “no ethical presumption” towards ρ and α, instead using “observable market realities” for their own calibration (wherein the resulting discount rate *r* is an observable parameter and not derived) (Nordhaus 2011b). The Stern Review (2006) uses the prescriptive approach, and Nordhaus’ DICE (2013) uses the descriptive approach. Table 3 summarizes the values for all parameters and derived variables for each respective model for all the SCC values I use.

The approach to discount rate is controversial. There are arguments to which approach is appropriate (Nordhaus 2006 and 2011b, Pindyck 2013, Stern 2006), and there are arguments the controversy itself is irrelevant (Nordhaus 2011b). The controversy is problematic because of the huge impact discount rate has on SCC values. Table 1 shows the difference between a 5%, 3%, and 2.5% discount rate from the U.S. Interagency Working Group. The 5% SCC value is only \$10/metric ton CO_2. The 3% SCC value is \$35/metric ton CO_2, and the 2.5% value is \$54. The huge SCC estimation for the Stern Review--\$127/metric ton CO_2—is due primarily to its very low (0.1%) PRSP used for calculating discount rate (Table 3).

	Stern	**Nordhaus**
ρ	0.1%	1.5%
α	1	1.5
g	1.3%	From Model
r	1.4%	5.3%

Table 3. A comparison in parameter values for calculating discount rate between the Stern Review and Nordhaus’ work. The Stern Review uses the prescriptive approach and calculates a value for *r* from inputting values for pure rate of social time preference ρ and elasticity of generational consumption α. Their high SCC value is a consequence of their very low value for ρ. Nordhaus uses the descriptive approach and takes observable values of *r* and *g* to calculate the ethical parameters ρ and α. Values from the Stern Review (2006) and Nordhaus (2011).

I thus suggest caution when using any SCC value and offer a reminder that any and all estimations are derived from models projecting the future based on fundamental equations that are arguably unjustified. Nonetheless, as this thesis is not being used for policy decisions, and as I take our SCC values from a variety of sources and approaches to these two fundamental problems, I feel that our selections are justifiable in the realm of academic exercise. I append no normative value to our SCC amounts or our resulting damage estimations and tax regimes.

Chapter 3: Results and Interpretations

I present the results in this chapter in two sections. I devote the first section to a study of our $EROI_{direct}$ results for global and national trends, and then I discuss $EROI_{direct,world}$ in comparison to King and Maxwell's energy cost share data. In the second section, I introduce global CO_2 damages and carbon cost shares, define and compare our four different damage distribution strategies, and finally look at estimations for global CO_2 damages from future projections.

3.1. $EROI_{direct}$

3.1.1 Global Trends

$EROI_{direct}$ for all 44 countries and the world is plotted in Figure 8. I break the data into two time series 1960-1989 for 26 OECD countries and 1990-2010 for 26 OECD and an additional 18 non-OECD countries. The world average $EROI_{direct}$ labeled in red rises slightly over the 1960-1989 time period, with a labeled minimum of 10.5 in 1974 and a maximum of 14.9 in 1984. $EROI_{direct,world}$ decreases from a starting high of 23.5 in 1990 to a minimum of 17.9 in 2005 and then rises gradually to a value of 18.9 in 2010. If I ignore the discontinuous jump in 1990 from the addition of multiple nations, the overall trend for global $EROI_{direct}$ is flat until the mid-1970s, increasing to the mid-1980s, decreasing until 2005, and increasing to 2010.

The trend behavior from the flat-to-minimum in the 1970s and the following peak in the 1980s can likely be explained in part by the influence of the early 1970s oil embargo; a period of increased investment in exploration and then development following the drop in oil supply bears fruit with abundant, cheaper (energy-based) energy in later years. This time-lag behavior is characteristic of EROI. In Figure 9 I plot $EROI_{direct}$ for the U.S. and the world alongside an $EROI_{direct}$ for oil and gas for production for the U.S. I calculate from data available from Guilford et. al (2011). Guilford's data is available in a 5-year resolution, and

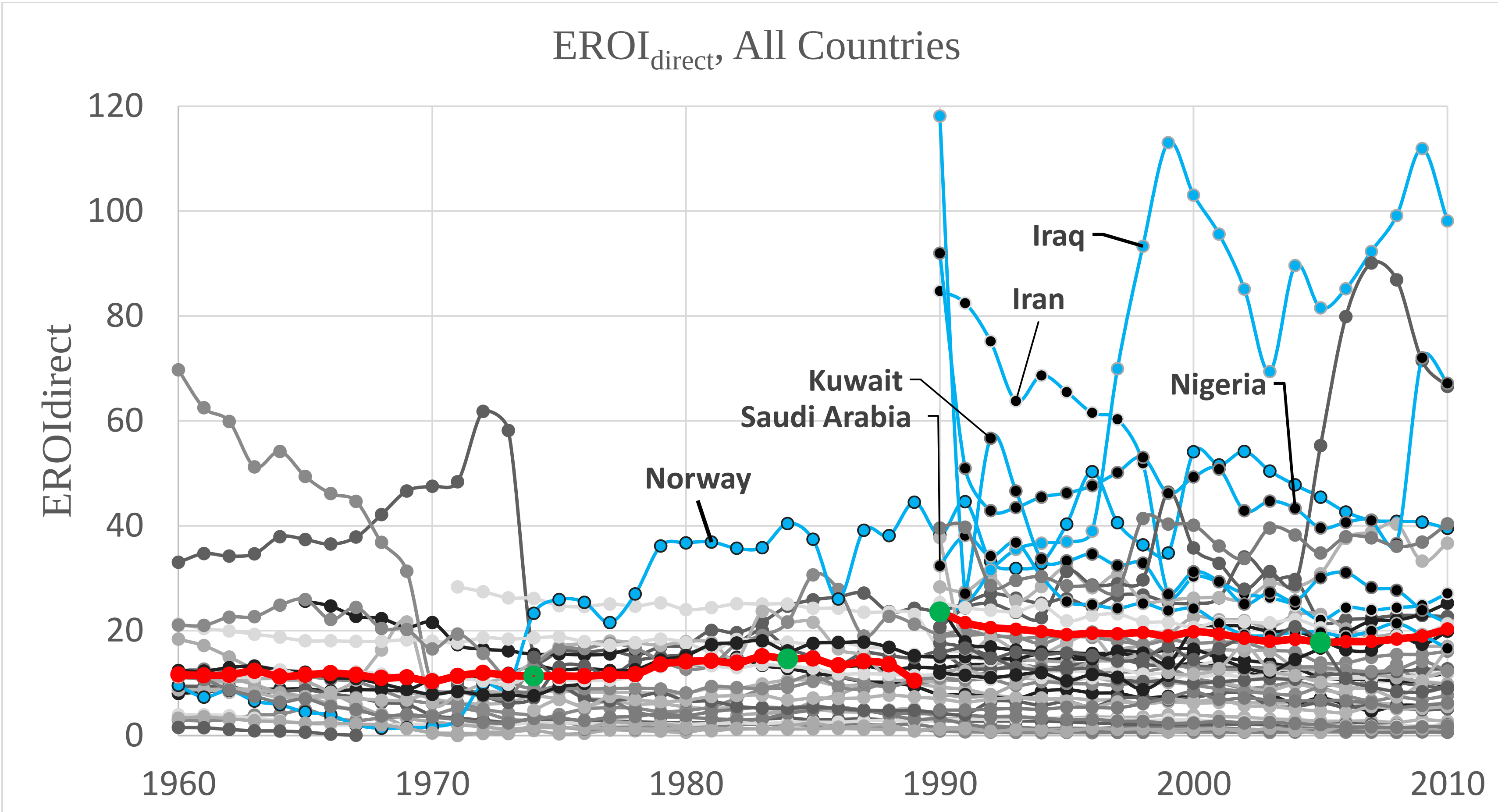


Figure 8. Country-level direct energy EROI for 1960-1989 and 1990-2010 for 44 countries. The red line depicts a production-weighted world-44 average $EROI_{direct}$. Local minima and maxima are noted in green for each of the two data sets. Blue lines indicate high crude-oil exporting nations with volatile $EROI_{direct}$ movements.

$EROI_{direct,o\&g,production}$ drops from a maximum of 19.8 in 1972 to a minimum of 10.8 in 1977 and rises through the end of the 1980s. Our U.S. $EROI_{direct}$ reaches a minimum of 9.5 in 1973 and a maximum of 13.7 in 1981. The trends are not identical: our U.S. $EROI_{direct}$ includes production and energy use from sources besides oil and gas, but the similarities in years for the 1970s and 1980s minima and maxima suggest a connection to the behavior of the oil and gas industry at that point in time.

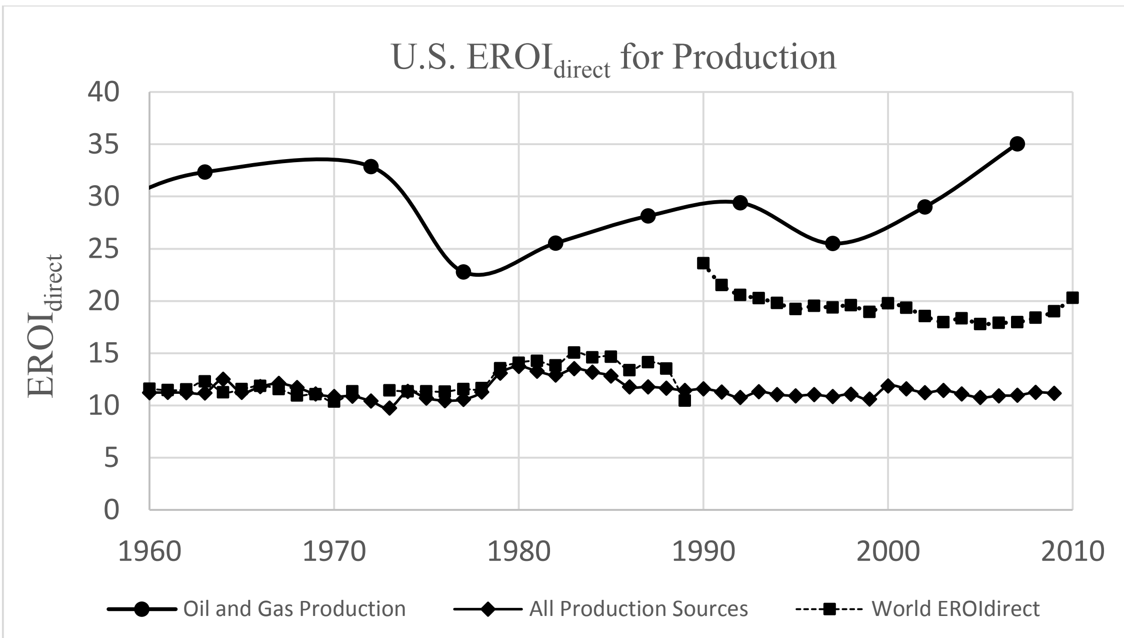


Figure 9. $EROI_{direct}$ for the production of oil and gas for the United States, for the U.S. for all production (the number I calculate in Chapter Two), and for the World-44 set. $EROI_{direct}$ for the production of oil and gas is calculated from data for production and direct energy inputs from Guilford et al. (2011). The profiles between $EROI_{direct}$ for oil and gas and all production differ in part because of the lower resolution of Guilford's data (5 years vs. 1 year).

3.1.2 Nations

Most individual countries exhibit relatively constant $EROI_{direct}$ values over time. The exceptions display wildly variable $EROI_{direct}$ numbers and correspond to crude-oil exporting countries, many of whom also have large ($EROI_{direct,exporter} > EROI_{direct,world}$) values. These countries are labeled in blue in Figure 8.

The relationship between $EROI_{direct}$ and exporting countries is understandable: High energy production is implicit in a high $EROI_{direct}$ value (see Eqn. 2 in Methods: Calculations), and a country with large reserves of cheap energy can be expected to export them. I might likewise expect a country with relatively high net imports to have a lower $EROI_{direct}$: it makes more sense to import cheaper foreign energy than to produce low-EROI, high-cost domestic energy. This attitude is supported by our results. The U.S. is a moderate net energy importer (primarily of crude oil) and has an average $EROI_{direct}$ around 10. Japan is a major net energy importer (>80% of all consumption) and has had an $EROI_{direct}$ less than 2 since 1972. Norway, a major exporter, has an $EROI_{direct=}$ consistently greater than 30.

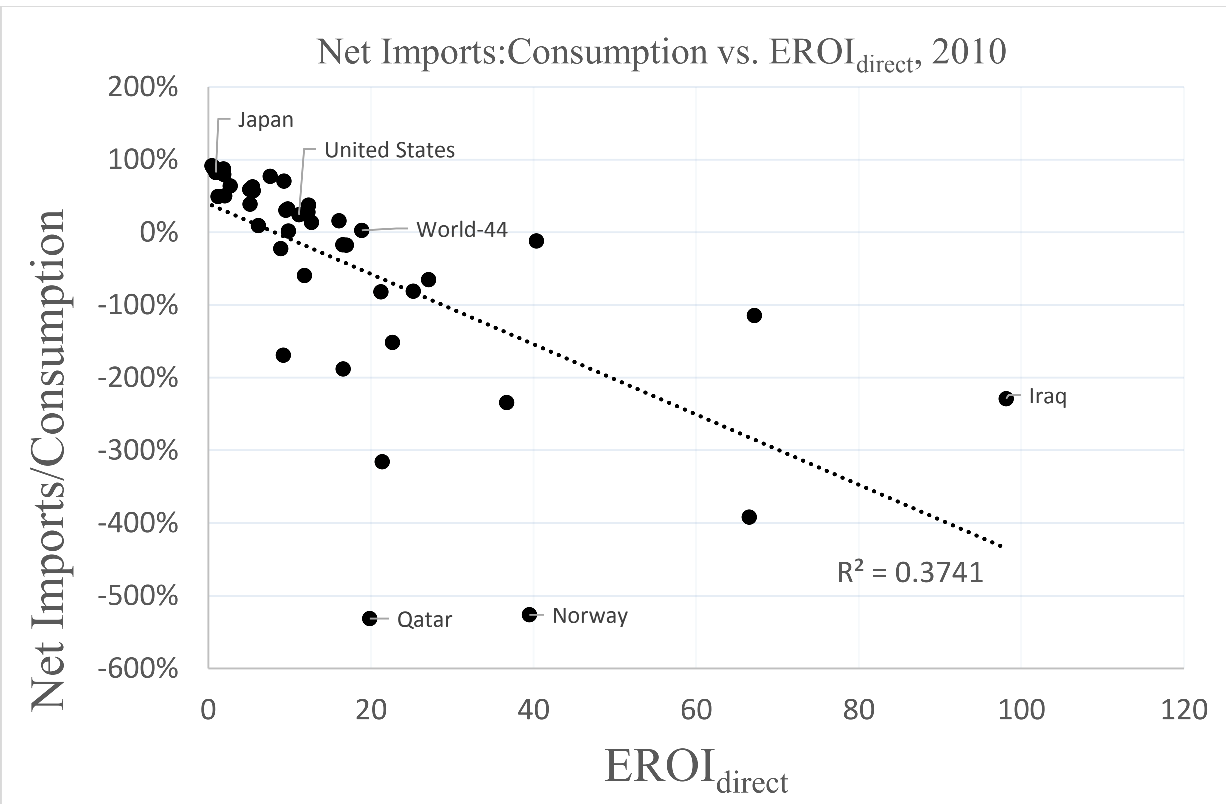


Figure 10. Net imports:consumption vs. $EROI_{direct}$ for 44 countries and world-44 for 2010. $EROI_{direct}$ increases with stronger net exporter behavior. Outliers are primarily large exporters, rather than importers with high $EROI_{direct}$ values. The world-44 set is a net importer in 2010 at 2.4%, with an $EROI_{direct}$ of 18.9.

I look more closely at this relationship between $EROI_{direct}$ and import/export behavior. I plot net imports as a percentage of consumption for all countries and the world against $EROI_{direct}$ in 2010 in Figure 10. I take values for net imports and consumption from the IEA Energy Statistics Database. I compare net imports and consumption against $EROI_{direct}$ for the years 1990, 1998, 2005, 2008, and 2010 for the 1990-2010 data set. These years correspond to the post-1990 maxima (1990,2008) and minima (1998,2005) for global $EROI_{direct}$ and $fGDP_e$, respectively. Figures for the other 4 years are attached in Appendix 2.

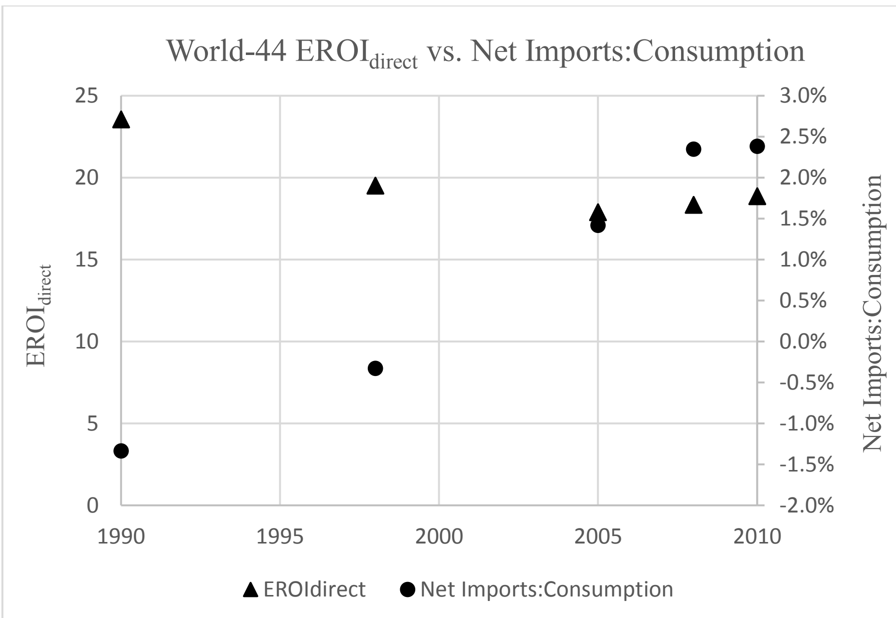


Figure 11. World-44 $EROI_{direct}$ and net imports:consumption values for 1990, 1998, 2005, 2008, and 2010. The metrics are inversely proportional to each other for these years.

Because I expect exporters to have higher $EROI_{direct}$, I expect a negative trend for net imports as a percent of consumption against $EROI_{direct}$; this expectation is met. For all years (1990, 1998, 2005, 2008, 2010) there is a fairly clear (r^2 ~0.3, 0.4) negative correlation between net imports and $EROI_{direct}$ (Appendix 2). There are very few countries who count as net exporters (<0%) with an $EROI_{direct}$ less than 20. What outliers exist are those net exporters with lower $EROI_{direct}$ values than expected. Qatar has an $EROI_{direct}$ of ~20 for a net import value of -530%;

Norway has an $EROI_{direct}$ of ~40 compared to a net import value of -526%. The world-44 set as a whole transitions from a net-exporting world in 1990 (net imports/consumption = -1%) to a net-importing world from 2005-2010 (net imports/consumption = ~2%). This transition correlates with a concomitant decrease in $EROI_{direct}$ (Figure 11).

In summary, these $EROI_{direct}$ trends from 1960-2010 suggest a point of highest direct-energy EROI in 1984, little variation on a global level of energy efficiencies, massive variation in $EROI_{direct}$ value between importers and exporters, and a global transition for our world-44 set (the majority of world GDP) to a 'net importer' group in recent years.

3.2 ENERGY COST SHARES AND $FGDP_E^{-1}/EROI_{direct}$

$EROI_{direct}$ looks at the ability to produce energy relative to direct energy inputs only. The global trend for 1960-2010 suggests little change in this energy-based 'affordability' of production; any depletion has been balanced out by technological capabilities allowing for greater efficiency in producing energy. However little $EROI_{direct}$ has changed over time, it is difficult to believe the same for $EROI_{world}$ (not direct) given the recent decrease in EROI for oil and gas on a national and global level (Guilford et al. 2011, Gupta 2011). Since $EROI_{direct}$ can say nothing about the ability to produce energy efficiently with regards to indirect energy inputs, I must use a separate metric to study changes in affordability over time.

To look at the effect of indirect energy inputs on production efficiency I might normally compare $EROI_{direct}$ for a fuel to its $EROI_{direct+indirect}$ value:

$$\frac{EROI_{indirect+direct,fuel}}{EROI_{direct,fuel}} < 1 \quad (11)$$

This value should theoretically be less than one because the numerator $EROI_{indirect+direct}$ takes into account additional (indirect) energy sources, lowering the resulting EROI value. However, the IEA lacks data for indirect energy inputs, so Eqn. 1 cannot be used. We might instead replace $EROI_{indirect+direct}$ with a proxy Energy Intensity Ratio (EIR) introduced by King (2010, 2015-submitted) such that

$$\frac{EIR_{fuel}}{EROI_{fuel,direct}} < 1 \quad (12)$$

The price-based (p) EIR of a fuel (n) $EIR_{p,n}$ is defined as the ratio of the price-based energy intensity ($EI_{p,n}$) to the energy intensity of the economy ($EI_{economy}$)

$$EIR_{p,n} = \frac{EI_{p,n}}{EI_{economy}} \quad (13)$$

Where $EI_{p,n}$ is defined as the ratio of the total consumption of a fuel to the total expenditures on that fuel, where expenditures are calculated as the product of price and consumption

$$EI_{p,n} = \frac{C_n}{Expenditures_n} = \frac{C_n}{P_n C_n} = \frac{1}{P_n} \quad (14)$$

And where $EI_{economy}$ is defined as the ratio between total energy consumption (TPES) and GDP

$$EI_{economy} = \frac{TPES}{GDP} \quad (15)$$

$EIR_{p,n}$ thus comes out to:

$$EIR_{p,n} = \frac{\frac{1}{P_n}}{\frac{TPES}{GDP}} = \frac{GDP}{P_n * TPES} \quad (16)$$

In order to compare $EROI_{direct}$ to EIR, $EIR_{P,N}$ needs to be translated into a country-level metric rather than a fuel-specific metric. I define the EIR for a country weighted for expenditures as

$$Weighted\ EIR = \frac{\sum_{n=1}^{9} EIR_{p,n} * P_n C_n}{\sum_{n=1}^{9} P_n C_n} \quad (17)$$

By substituting for the value of $EIR_{P,N}$ this becomes

$$Weighted\ EIR = \frac{\sum_{n=1}^{9} \frac{GDP}{P_n * TPES} * P_n C_n}{\sum_{n=1}^{9} P_n C_n} \quad (18)$$

Since the sum of consumption equals the TPES, this transforms into

$$Weighted\ EIR = GDP \frac{1}{\sum_{n=1}^{9} P_n C_n} \quad (19)$$

Since $fGDP_e$ is defined as the ratio of total expenditures to GDP, the expenditure-weighted EIR of a country is thus equal to the inverse energy cost share $fGDP_e^{-1}$

$$Weighted\ EIR = \frac{GDP}{\sum_{n=1}^{9} P_n C_n} = fGDP_e^{-1} \quad (20)$$

and

$$\frac{EROI_{direct+indirect}}{EROI_{direct}} \approx \frac{Weighted\ EIR}{EROI_{direct}} = \frac{fGDP_e^{-1}}{EROI_{direct}} < 1 \quad (21)$$

This final ratio should In Eqn. 21 also be less than 1 because $fGDP_e^{-1}$ accounts for indirect inputs by virtue of the energy expenditures term. Increasing values of this ratio should represent energy becoming cheaper in terms of indirect and capital inputs, and decreasing values should reflect the opposite. Figure 12 shows the profile for the ratio of Eqn. 2 for the years 1978-2010. These data are still broken into two sets, 1978-1989 and 1990-2010.

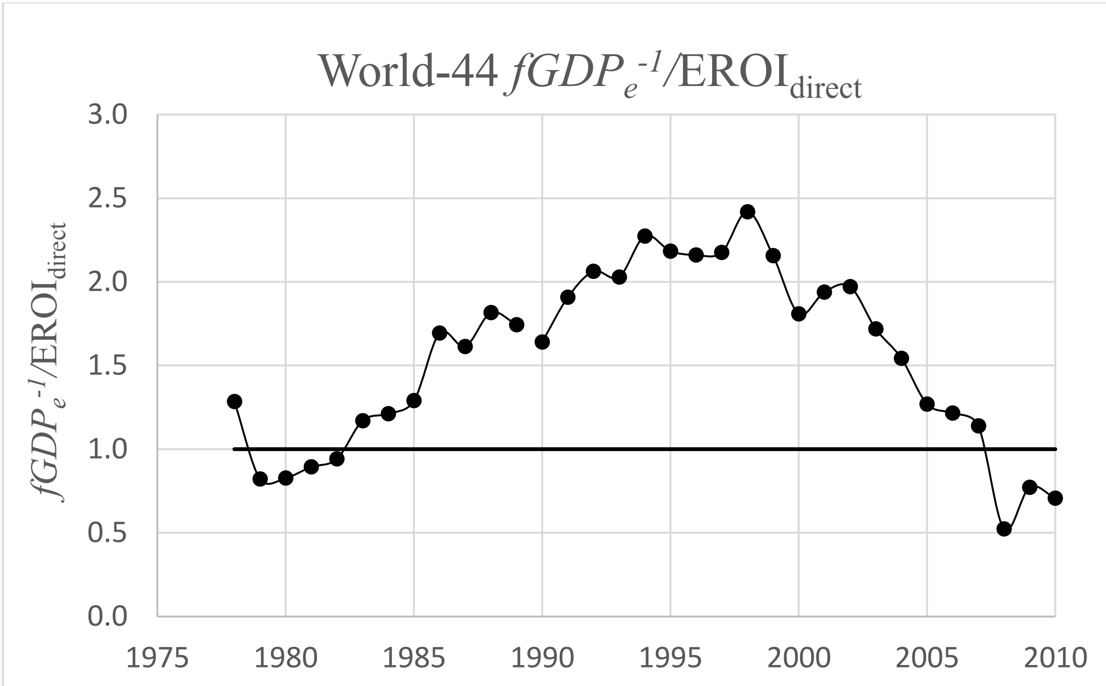


Figure 12. World-44 $fGDP_e^{-1}$/EROI$_{direct}$ for 1978-2010. Values hold below 1 for 1979-1982 and 2008-2010.

Two things are immediately of note. The inequality <1 is not supported: this ratio holds for only the years 1978-1982 and 2008-2010. There are several reasons why our ratio value may be greater than one:

- **Insufficient or imperfect data.** I describe the limitations inherent in our IEA data in the Methodology chapter. Beyond arguable veracity of information in the case of some countries (e.g. Africa and the Middle East), I lack all data with regards to biomass and biofuels production.
- **Time lag.** Energy production (EROI) and energy expenditures ($fGDP_e$) are linked to the flow for the current year. EIOU (EROI) is linked to current and future flow amounts, i.e. it is involved also in the production of future energy. This time 'mismatch' can make comparison between these two metrics difficult.
- **Debt.** The inverse cost share of energy term could be artificially inflated as a result of the presence of debt. To address this possibility, I calculate a debt-adjusted $fGDP_e^{-1}/EROI$ for

the world-44 set less several countries (as a result of more limited data availability for debt figures). I adjust annual GDP for the year's deficit amount

$$fGDP_{debt} = \frac{\sum energy\ expenditures}{GDP - deficit} \quad (22)$$

Where I back-calculate deficit values from figures for total public plus private gross external debt / GDP from Reinhart and Rogoff (2010). In Figure 13 I compare our unadjusted ratio from Figure 5 to an inverse *fGDPₑ* value for all countries for which I have debt data and to a $fGDP_e^{-1}/EROI$ value for these same countries whilst adjusting for the presence of debt. The debt-adjusted ratio value is noticeably smaller.

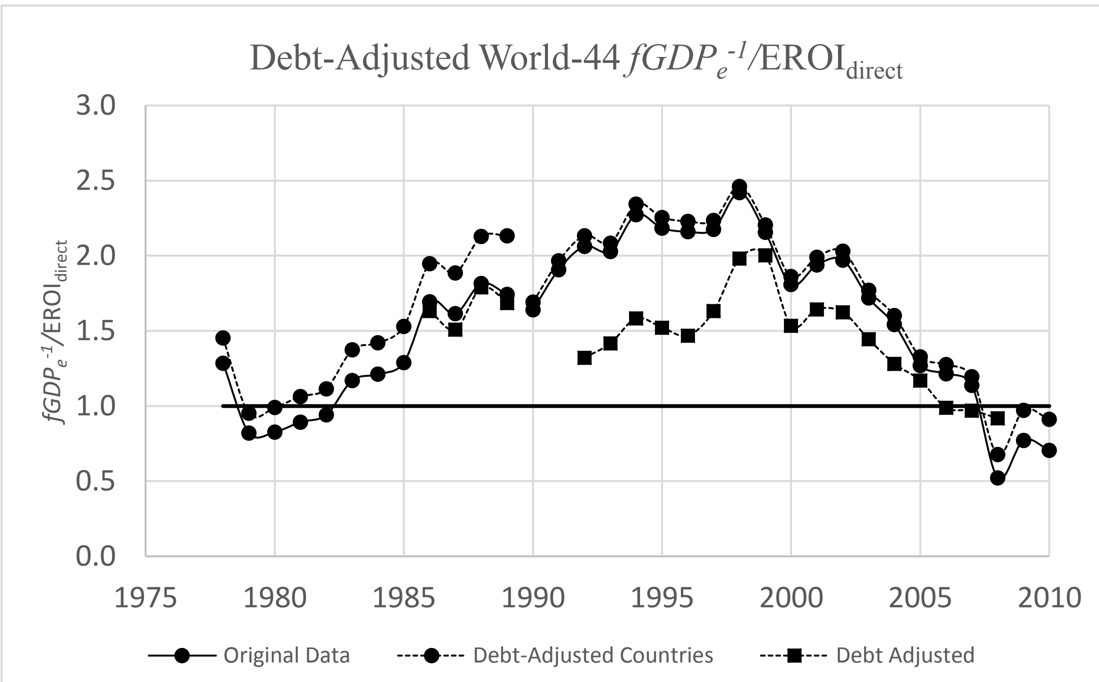


Figure 13. World-44 $fGDP_e^{=1}$/EROI$_{direct}$ for 1978-2010. Debt-Adjusted Countries $fGDP_e^{=1}$/EROI$_{direct}$ for 1978-2010. This second set is the ratio value for all countries with data for debt and contains all the countries for World-44 minus the Czech Republic, Iran, Iraq, Kuwait, Libya, Qatar, and Saudi Arabia. The final Debt-Adjusted set is $fGDP_e^{-1}$/ EROI$_{direct}$ for the second set adjusting for annual deficits, for 1968-1989 and 1992-2008. Debt and deficit data are taken from Reinhart and Rogoff (2010).

- **Underestimation of energy expenditures.** Estimates for energy expenditures for $fGDP_e$ from King and Maxwell are likely underestimated. They do not include expenditures for biomass and include oil but do not adjust for the higher prices of refined petroleum products, e.g. gasoline (King 2015-submitted, Maxwell 2013). Refined and secondary petroleum products and derivatives are included in the calculation of $EROI_{direct}$. To address the inflation of our ratio value from expenditure underestimation, I use equations 21 and 22 to calculate an unadjusted and adjusted ratio value for the United States for 1978-2010. I further adjust the debt-adjusted value to additionally include energy expenditure estimations from the EIA (Annual Energy Review, table 1.5), which do include price estimations for refined petroleum products. Figure 14 shows the differences between the profiles for these three ratio values. The ratio that accounts for higher prices in addition to debt is noticeably lower than our other two profiles. Unfortunately, I lack similar information for other nations.

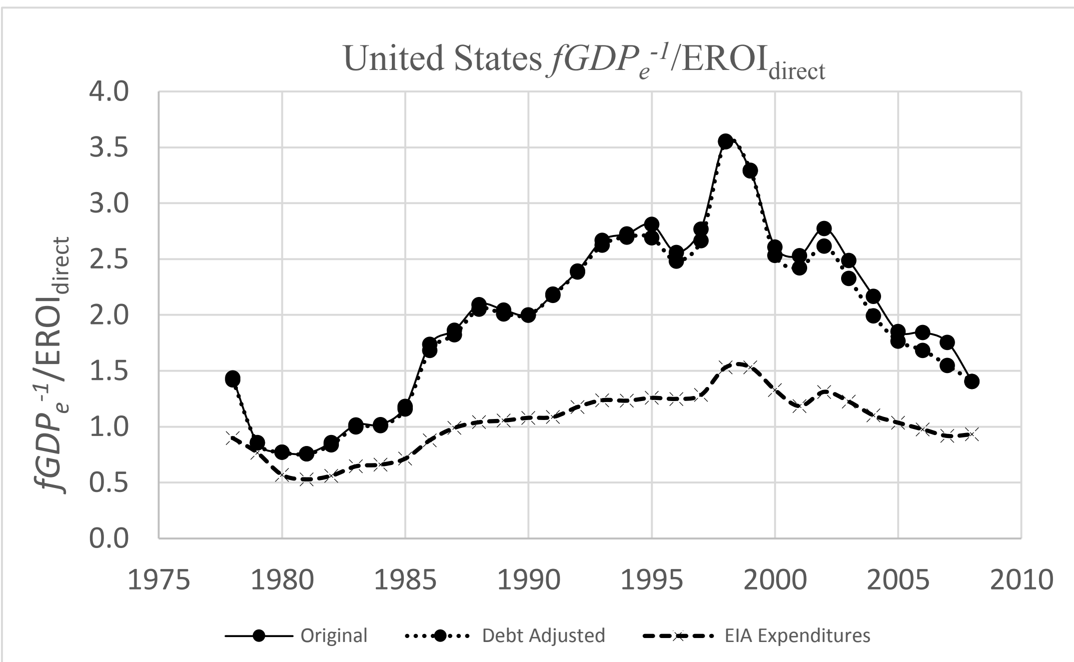


Figure 14. $fGDP_e^{-1}/EROI_{direct}$ for the U.S. for 1978-2008 for three data sets. The original data set and the debt-adjusted set are close in value. The third set adjusts for both debt and larger energy expenditures from refined petroleum products and is significantly closer to the <1 boundary. Data for this final set are taken from the U.S. EIA Annual Energy Review, Table 1.5.

The second item I note is that this ratio value $fGDP_e^{-1}/EROI_{direct}$ is highly variable, and that this variation stems from the energy cost share term. Figure 15 plots both the global energy cost share and our ratio value for 1978-2010. These profiles are mirrors mainly due to the steady nature of the global value for $\mathrm{EROI}_{\mathrm{direct}}$. The two minima in 1979 (0.82) and 2008 (0.52) correspond to maxima for global energy cost share (10.3% and 8.1%), which King (2015) notes also correspond to two periods of slower global economic growth.

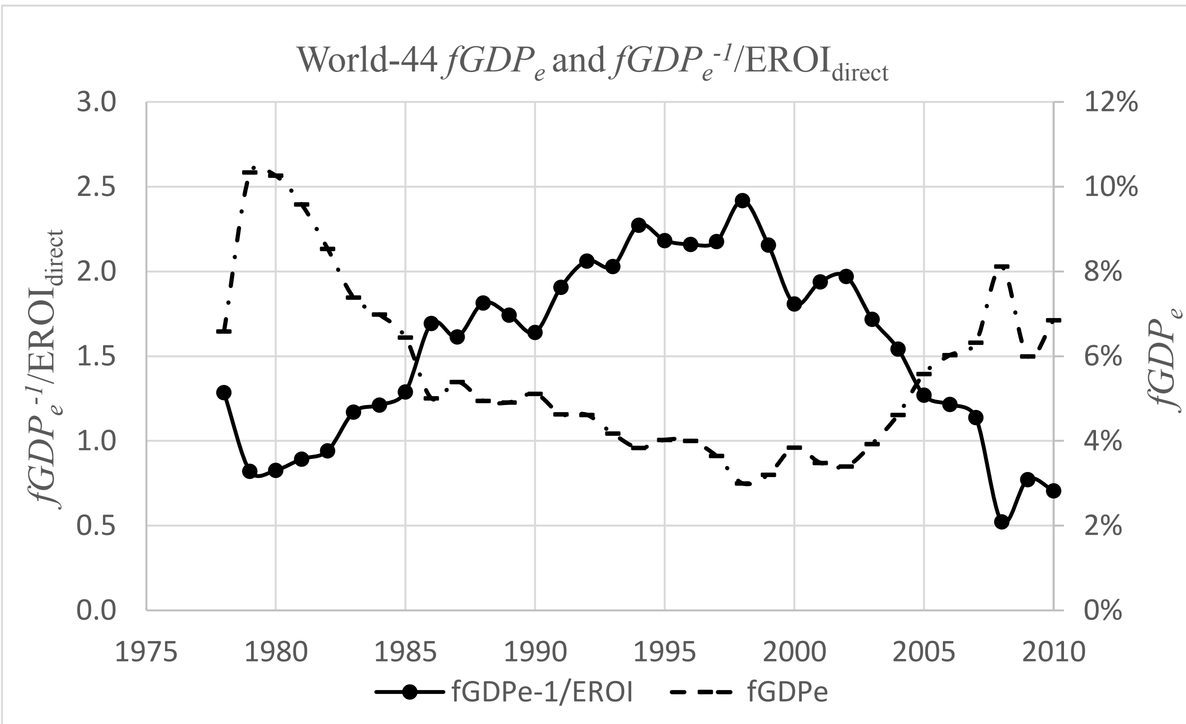


Figure 15. World-44 $fGDP_e$ and $fGDP_e^{-1}/\mathrm{EROI}_{\mathrm{direct}}$ for 1978-2010. The low volatility of global $\mathrm{EROI}_{\mathrm{direct}}$ leads to the movement of $fracGDP_e^{-1}/\mathrm{EROI}_{\mathrm{direct}}$ being more heavily influenced by the energy cost share term.

Taking the trend behavior for energy cost shares, inverse energy cost shares / $\mathrm{EROI}_{\mathrm{direct}}$ and global $\mathrm{EROI}_{\mathrm{direct}}$ alongside the declining status of EROI for global oil and gas (Guilford et. al 2011, Gupta 2011) and the connection between energy cost share maxima and slower economic growth, I suggest that indirect energy has been more effective a driver for overall EROI and energy production efficiency in recent history; that in the war between 'depletion' and ‘innovation,’ indirect energy and capital inputs have become increasingly important towards maintaining economic sustainability.

3.3 GLOBAL CO2 DAMAGES

Before I discuss results, I remind the reader that these damages are not ‘real’ in the sense that they are not currently being charged to any nation or the world. Rather, these damages are calculations of the estimation of the equivalent cost of CO_2 emissions annually emitted, as embodied in damages to properties, flooding, health care, etc., resulting from climate change in a given year. Any damage amount is also the equivalent amount ‘saved’ by reducing emissions for a given year. I internalize these damages into energy cost shares as an ‘indirect’ expenditure arising from energy sources.

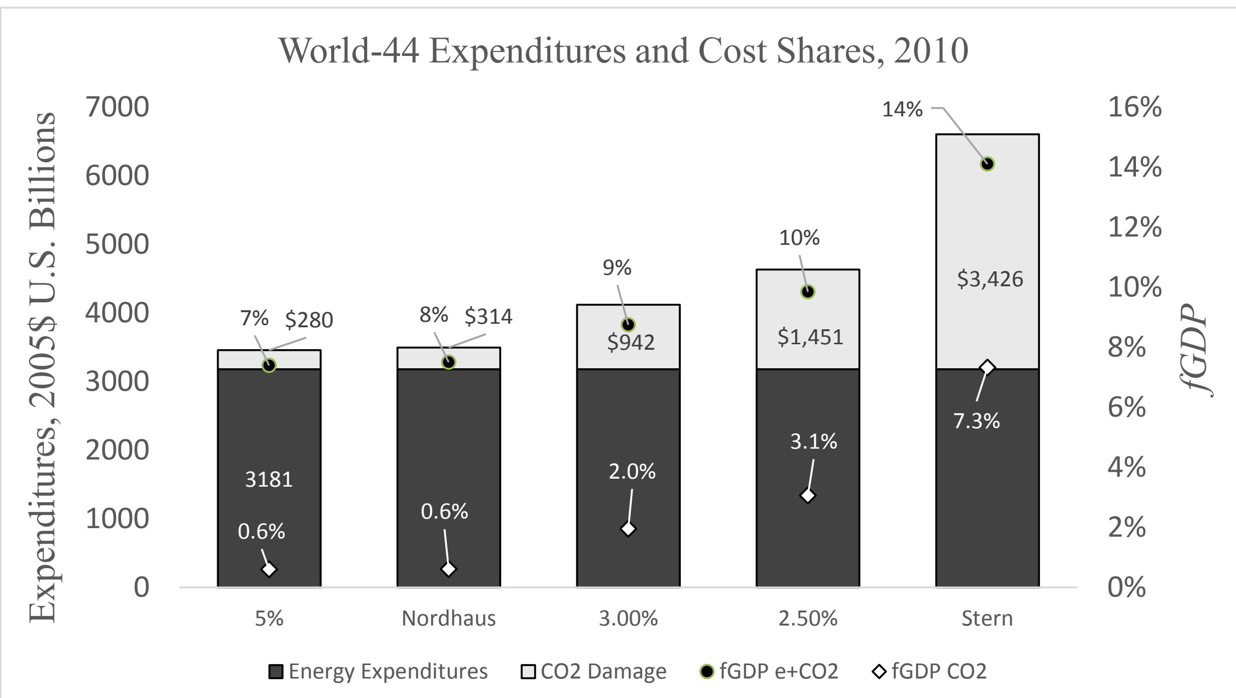


Figure 16. World-44 energy expenditures, CO_2 damages, and carbon and energy and carbon cost shares for 2010 for all 5 SCC values.

Figure 16 shows World-44 damages and energy expenditures in 2005$ U.S. billions, $fGDP_{CO2}$ and $fGDP_{e+CO2}$ for all five SCC values. Corresponding global values are summarized in Table 4. Appendix 2 similarly summarizes historical (1980-2009) data for all of these parameters.

SCC	Value ($/metric ton)	World-44 Damages (Billions)	World-44 $fGDP_{CO2}$	World-44 $fGDP_{e+CO2}$	World Damages (Billions)	World $fGDP_{CO2}$
5%	$ 10.36	$ 280	0.6%	7%	$ 322	0.6%
3%	$ 34.85	$ 942	2.0%	9%	$ 1,082	2.1%
2.50%	$ 53.69	$ 1,451	3.1%	10%	$ 1,668	3.2%
Stern	$ 126.79	$ 3,426	7.3%	14%	$ 6,139	11.7%
Nordhaus	$ 11.63	$ 314	0.6%	8%	$ 361	0.7%

Table 4. Damages, carbon cost shares, and energy and carbon cost shares for 2010 for the world-44 set and the world for all 5 SCC values, 2010.

World-44 accounts for 87% of global CO_2 emissions in 2010. Damage estimates vary from a low of $280 billion for world-44 ($322 billion for the world) for the U.S. 5% SCC estimation to a high of $3.4 trillion for the world-44 set with the Stern Review estimation. The 5% and Nordhaus SCC values account for approximately 0.6% of world-44 and global GDP (Table 4). I note that this value is less than the low suggested value for energy expenditures recommend by the Stern Review—1% of global GDP (Stern 2006)—which comes out to $17/ton CO_2. The 3% and 2.5% SCC result in damages of ~$1 and ~$1.5 trillion for 2010 at carbon to GDP cost fractions of 2% and 3%. The potential effect of discount rate on damages is clear here: by halving the chosen discount rate (e.g. 5% to 2.5%) the SCC and resulting damage estimates are more than quintupled. The Stern SCC estimation is a high outlier with a global damage value of $3.4/$6.1 trillion for the world-44/world data sets and CO_2 cost share fraction of 7% and 12%. I note that internalization of CO_2 damages to energy cost shares for $fGDP_{e+CO2}$ is significant enough that in all but one (5%) SCC cases world $fGDP_{e+CO2}$ in 2010 rises to 8% or higher, a value correlated historically with slow points of global growth (King 2015-submitted).

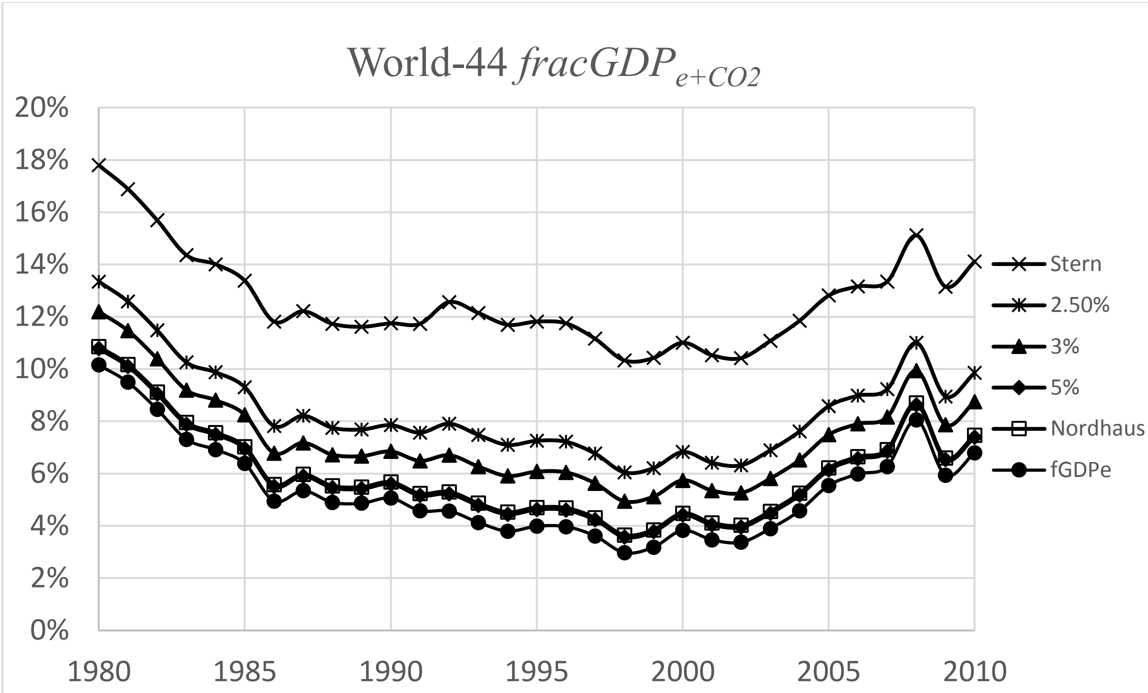


Figure 17. World-44 energy and carbon cost shares for 1980-2010 for all 5 SCC values. Energy cost shares only are shown as well, for comparison.

Figure 17 shows the profiles for $fGDP_e$ and $fGDP_{e+CO2}$ for all SCCs for the world-44 set from 1980-2010. As our world-44 set accounts for a greater proportion of global GDP than it does for global CO_2 emissions for all years, these values are likely underestimations of the 'true' global $fGDP_{e+CO2}$. If I assume Maxwell's argument that $fGDP_{e,world\text{-}44} \approx fGDP_{e,world}$ to be true, then $fGDP_{e+CO2,world} \approx fGDP_{e,world\text{-}44} + fGDP_{CO2,world}$, and the global energy and cost share for the whole world in 2010 ≈ 7.4% for the 5% SCC value and ≈18.5% for the Stern value. Figure 18 shows the difference between $fGDP_{e+CO2,44}$ and $fGDP_{e+CO2,world}$ for all SCC values for 2010, and Figure 19 compares the difference in the two cost shares for the 5% and Stern estimations for 1980-2010.

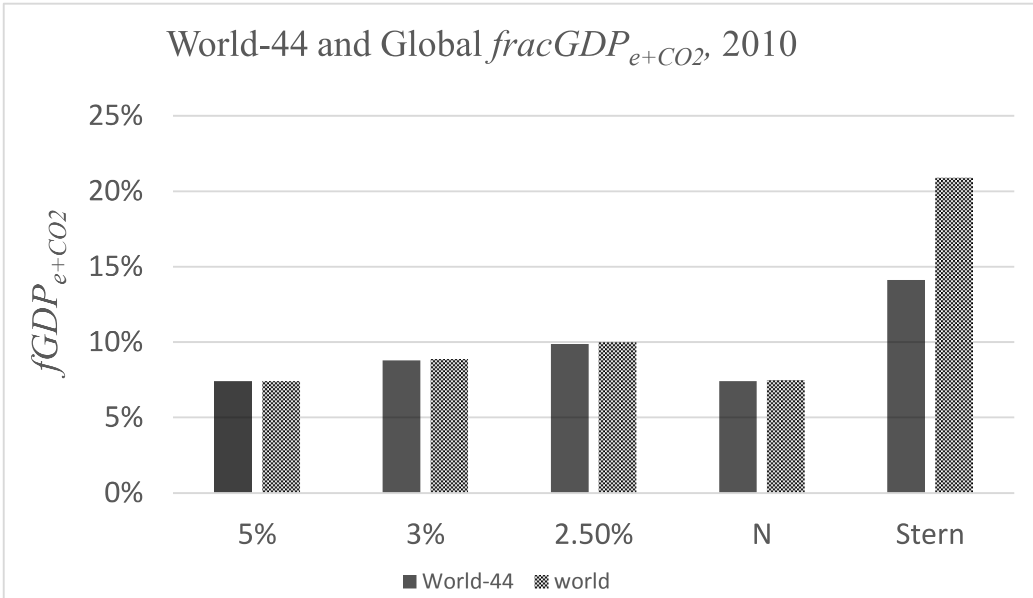


Figure 18. World-44 and global estimated energy and carbon cost shares for all SCC for 2010. Global values are marginally higher than World-44 values for all SCC but for the Stern estimation, which is 6% larger.

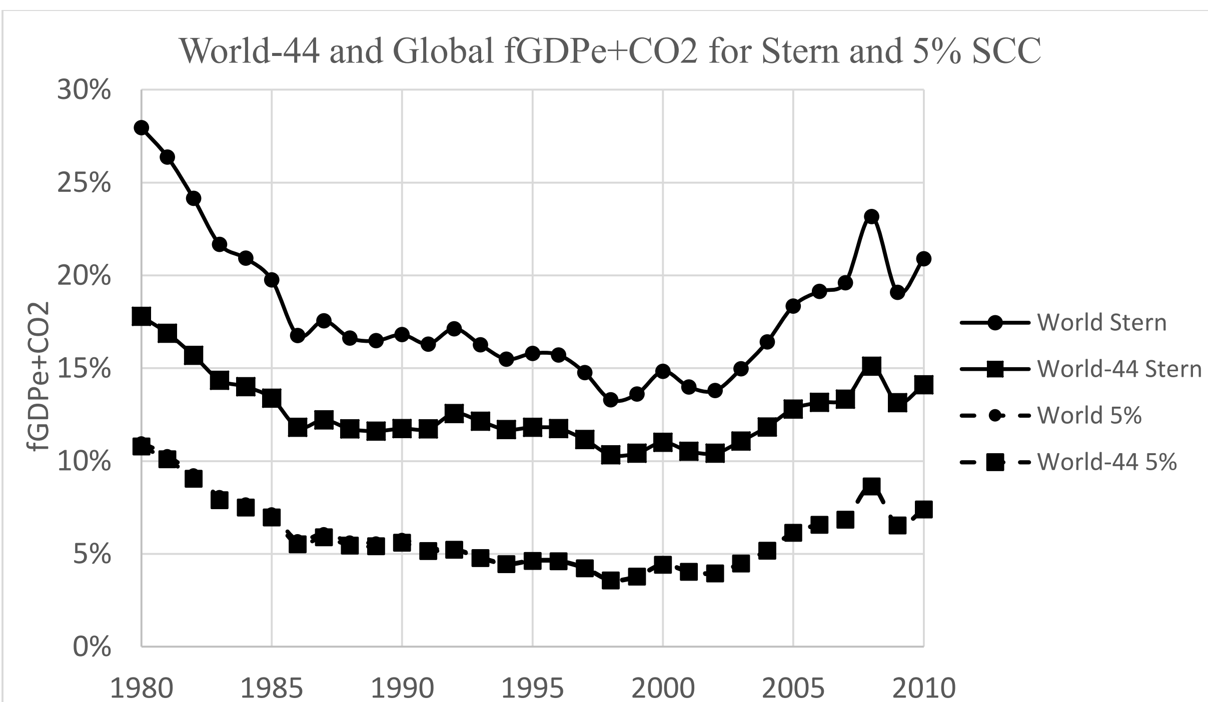


Figure 19. World-44 and global energy and carbon cost shares 1980-2010 for Stern and 5% SCC values. As indicated by the value for 2010, world-44 and global amounts for the 5% estimation are similar. Larger SCC values highlight the gap between world-44 and global $fGDP_{e+CO2}$ values as a result of greater global CO_2 emissions.

3.4 CO_2 DAMAGE PAYMENT DISTRIBUTIONS

No global agency exists to pay annual global damages. I divide the burden (payment amounts) amongst those nations responsible for them in the world-44 set. As I intend this section to be a discussion of how different distribution types affect national damage amounts and cost shares, I will primarily be using result values from the 5% SCC case (~$10/ton CO_2). Summary tables for all SCC values and all damage distributions for all years 1980-2010 for all countries are attached in Appendix 2.

3.4.1 Flat Tax

I design a flat tax to place the burden of damages proportionately on those nations responsible for them. An immediate problem with this distribution arises from the fact that SCC are calculated from a combination of emission amounts and cumulative atmospheric CO_2 concentrations such that any distribution based on emissions in the present day will likely unfairly favor nations who emitted major amounts of CO_2 in the past.

The results for this distribution are expected: the highest CO_2 emitters pay the most in absolute payment amounts. I show values for the 5% SCC case, which results in the lowest damages, in Figure 20. Values for all other cases for all other nations are available in Appendix 2. The damages go primarily to those nations with the largest amount of CO_2 emissions. China pays the most with $77 billion, followed by the U.S. at $58 billion. India, Russia, and Japan follow with $17, $12, and $18 billion in damages, and the remaining nations are all well below $10 billion. Sixteen nations pay less than $1 billion, and New Zealand pays the least with $0.4 billion in damages.

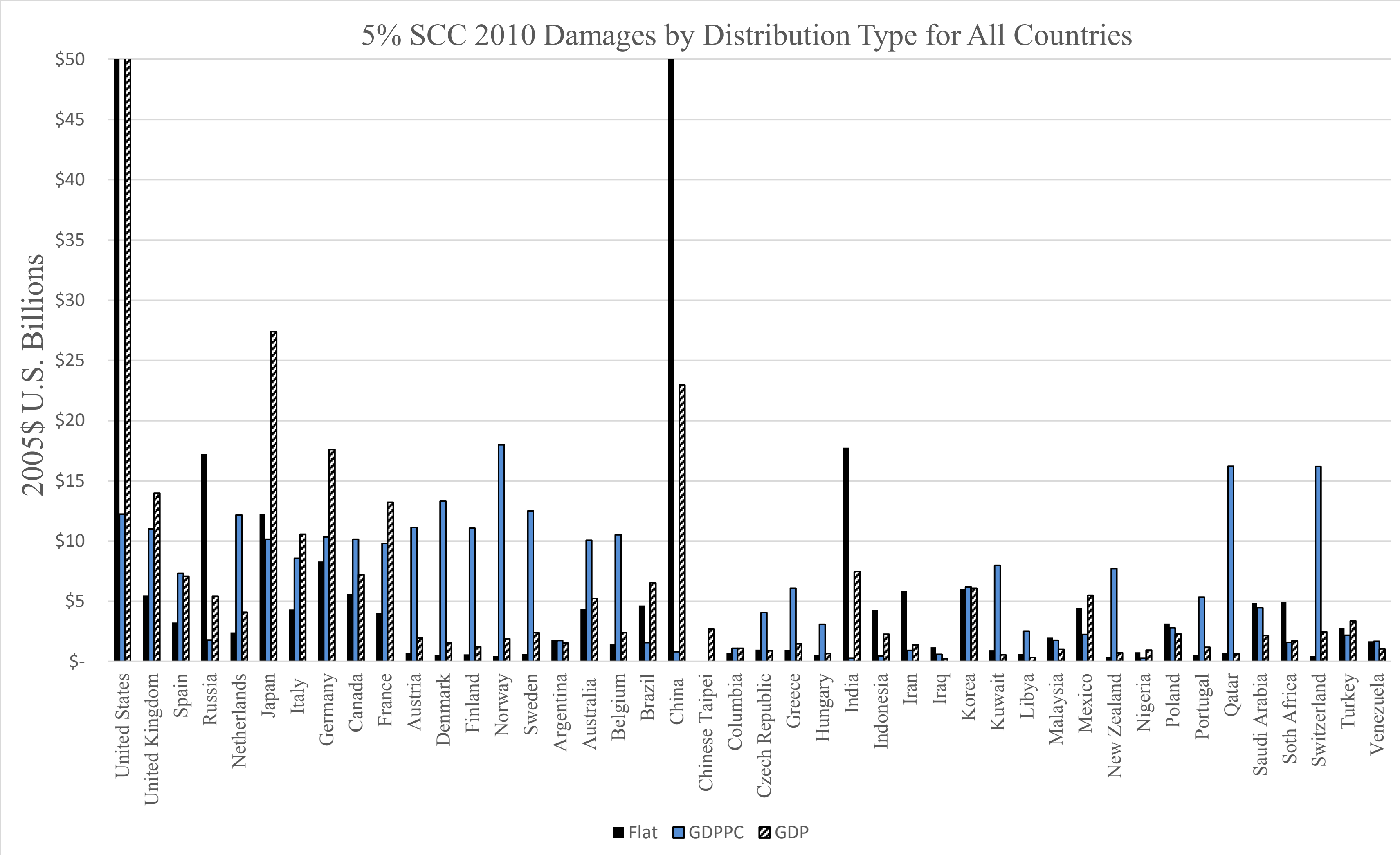


Figure 20. Damages in 2005$ U.S. Billions for all countries for Flat, GDPPC, and GDP distributions of global (World-44) damages. Flat values for the U.S. ($58) and China ($77) as well as U.S. GDP values ($78) are more than $50 billion, but have been cut for scaling reasons.

Corresponding $fGDP_{e+CO2}$ and $fGDP_{CO2}$ values for these high-paying nations show that high damage amounts do not necessarily infringe upon GDP proportionately. While China's $77 billion in damages accounts for 2% of its energy cost share, and Russia and India have 1.9% and 1.5% carbon cost shares, the U.S. $58 billion in damages only accounts for 0.4% of its 2010 GDP. Rather, judging by $fGDP_{CO2}$ values, the flat tax penalizes most those nations with low GDPPC. Figure 21 shows the relationship between $fGDP_{CO2}$ and GDPPC. Of the 12 countries with $fGDP_{CO2}$ >1%, 10 have a GDPPC less than $10,000. China and India both have larger GDPs ($3.8 and $1.2 trillion) as developing nations, but still have low GDP per capita. The combination of their high emission amounts in tons and lower GDPPC results in carbon cost shares for both of them greater than 1%. So, while the flat tax may spread the majority of its damage amongst nations with very large GDPs (U.S., Japan), it also affects countries with increasing GDP, low GDPPC, and high emissions in addition to just low-GDPPC countries; essentially, it places more of a proportionate burden on developing economies who might be more likely to pursue burning of cheap, CO_2-rich fuel similarly to the energy transition seen by the U.K. and Sweden.

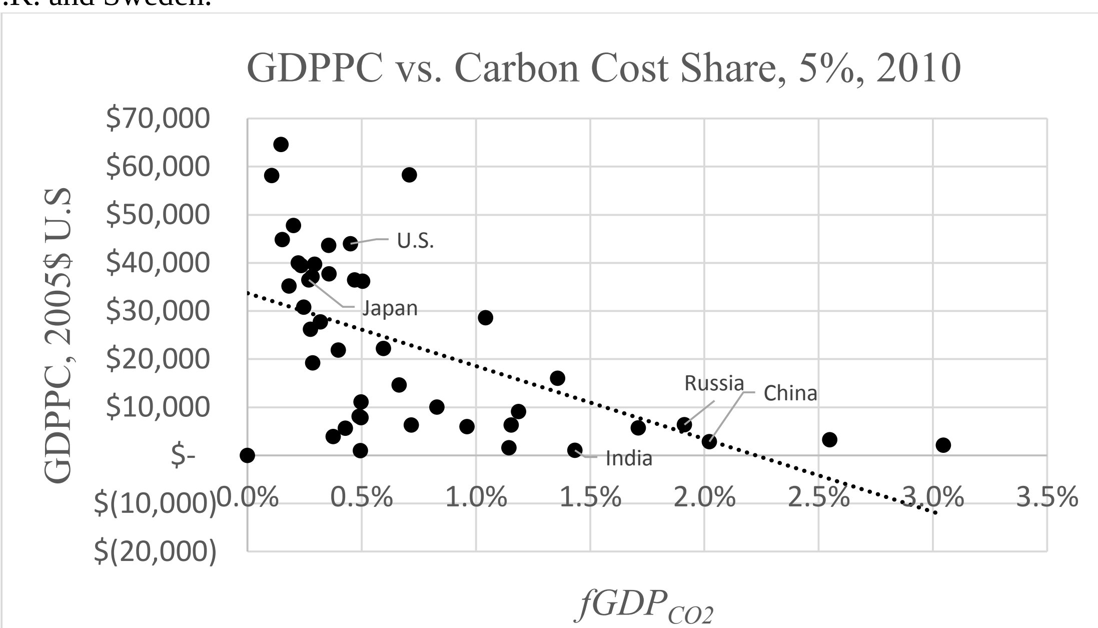


Figure 21. GDPPC in 2005$ U.S. vs. carbon cost share for the 5% SCC value for 2010 for all countries. Countries with higher cost shares (>1%) generally have lower GDPPC (<$10,000). The highest CO_2 emitters are identified on the graph.

3.4.2 GDPPC Tax

I design a GDPPC tax to place the burden of damages proportionately on those nations with higher GDPPC as a linear function of the nation with the lowest GDPCC in our world-44 dataset, Nigeria. A country with a GDPPC twice as large as Nigeria pays twice as much in penalty, such that the world overall pays a penalty equal to the world damages calculated for a given SCC.

Figure 20 shows a comparison of damage amounts for all countries for 2010 for the 5% SCC value. As the base multiplier, Nigeria pays the least at \$0.28 billion. The burden for the majority of damages shifts away from the nations paying the most in the Flat Tax and towards European countries. Damages from the high-paying Flat Tax countries decrease drastically: the U.S. damages are now \$12 billion. Russia is down to \$1.8 billion from \$12, Japan down \$2 billion to \$10 billion in damages. China, as a result of its low GDPPC, pays \$76 billion less in damages at \$0.8 billion. India likewise pays less than a billion dollars. In addition, all nations with $fGDP_{CO2}$ > 1% for the flat tax (low GDPPC nations) unsurprisingly pay less than they did for that distribution scheme.

The majority of the payment is off-loaded to European countries, and the result is that the $fGDP_{CO2}$ values for these nations are highly inflated versus their flat tax amounts. Figure 22 shows a comparison for carbon cost share values for flat and GDPPC distributions for 2010. While the flat distribution had 12 nations with $fGDP_{CO2}$ > 1%, the GDPPC distribution has 20 countries with $fGDP_{CO2}$ >1%, and the majority of these are several percentages higher (~3%). Qatar’s GDPPC is so high that its carbon penalty makes up over 70% of its combined energy and carbon cost share; many countries with flat tax damages of <\$1 billion end up with damages in excess of \$10 billion with a GDPCC distribution: Netherlands, Austria, Denmark, Finland, Norway, Sweden, and Qatar, among others.

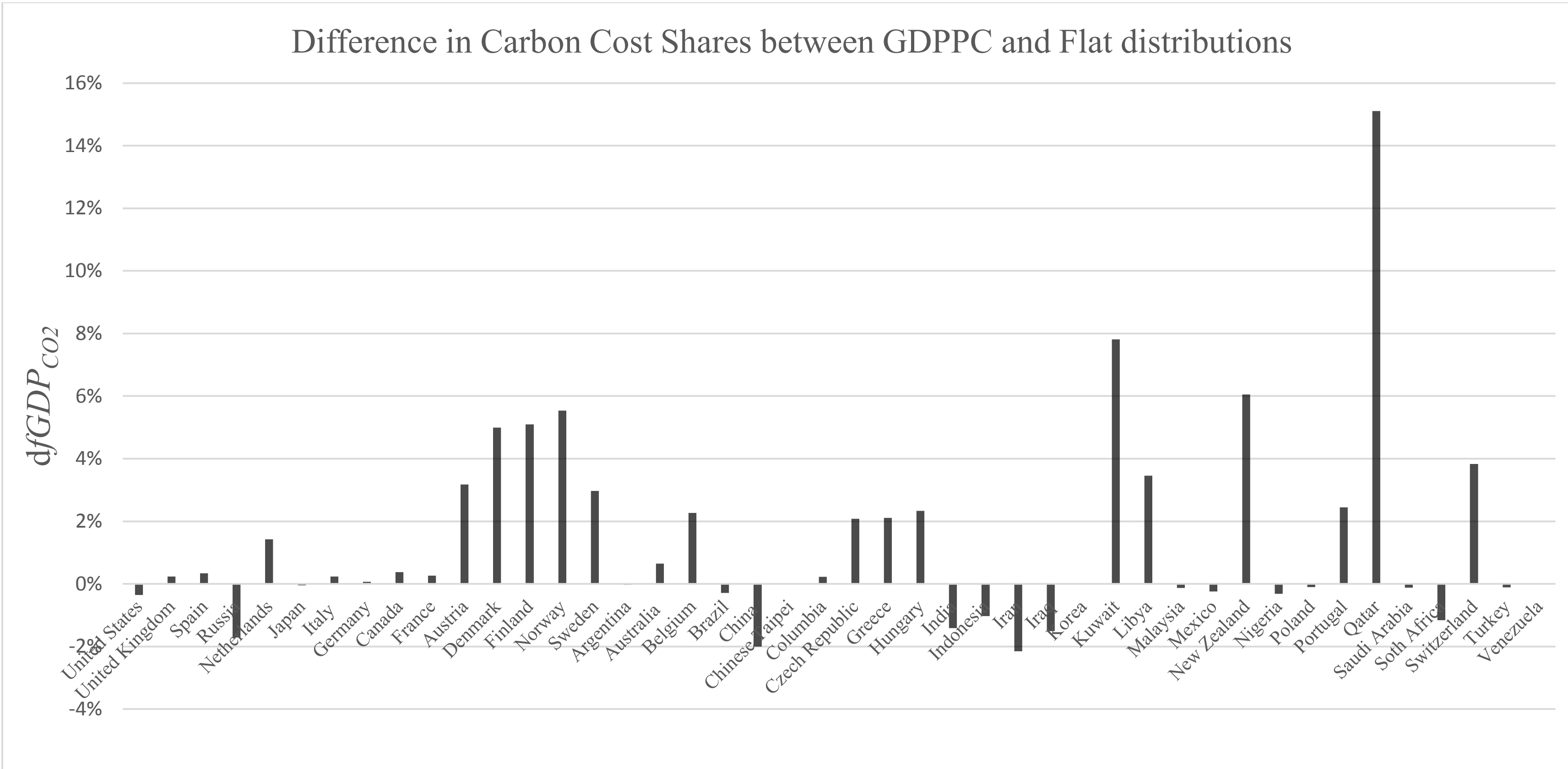


Figure 22. Difference in carbon cost shares between GDPPC and Flat distributions ($fGDP_{CO2,GDPPC}$-$fGDP_{CO2,Flat}$) for 2010 for all countries for the 5% SCC value. Low-GDDPC nations with large (>1%) carbon cost shares for the flat distribution pay less with a GDPPC distribution; richer (mainly European) countries pay much more (~5%) with a GDPPC distribution than with a Flat distribution.

3.4.3 GDP Tax

With a GDP tax I shift global damages proportionately to country vs. global GDP such that the carbon cost share of each country is equal to 0.6% of that country's GDP. The U.S. ($78 billion) and Japan are the only high CO_2 emitters whose damages increase relative to their payments for the Flat distribution (Figure 20). China's damages drop to $23 billion, Russia's to $5 billion, and India's to $7 billion. 26 countries pay more relative to the flat tax. Nigeria pays $0.17 billion more compared to the flat distribution, but all of the other low-GDPPC nations (<$10,000) penalized heavily in the flat distribution pay less with the GDPPC distribution. Those nations who pay more with a GDPPC distribution are overwhelmingly European countries. However, since all countries pay a damage that brings their carbon cost share to 0.6%, the difference in carbon cost share versus the flat tax is nowhere greater than ~0.5% (Norway), and five nations end up with greater than 1% cost share savings (a negative $dfGDP_{CO2}$). If I judge affordability in the realm of proportionate expenditures (i.e. the Stern Review's suggestion of a flat "1%" of GDP towards climate mitigation), the GDP tax seems to be the tax with the least amount of variation in damages across all countries, and with no outliers who pay an astonishing amount versus other countries.

3.4.4 Balance Tax

The Balance tax is the other way of distributing damages to nations in line with global energy cost share values. The GDP tax results in all nations having the same $fGDP_{CO2}$; the balance tax results in all nations having an energy and carbon cost share equivalent to the global value in 2010 (7.4% for 5% SCC case).

Since the general variation in energy cost shares is quite large (3.3% to 53% without internalizing carbon costs), the balance tax results in much more variation in $dfGDP_{CO2}$ and CO_2 damage amounts. I show the difference in damage amounts between all distribution types in Figure 23. I immediately note that some nations have very large positive tax amounts and others have very large negative tax amounts. In order to have all countries end up with an energy and carbon cost share equal to the world amount, I have to make large carbon damage adjustments to nations with very large GDPs. As a result, the U.S. damages for 2020 for the 5% SCC comes out to $316 billion, or $36 billion *more* than the world-44 global CO_2 damage for that year. China's damages are *negative* $209 billion, or a ~$286 billion savings versus a flat distribution. Russia, India, and Saudi Arabia also have damages in the negative several dozen billion dollars, and Germany and Japan pay substantially more than all other distribution types as a result of their high GDP and low $fGDP_e$ values: Germany's damages are $56 billion and Japan's $117.

The result is that all nations end up with $fGDP_{e+CO2}$ of 7.4%. In making this adjustment, only six countries have a carbon cost share value between 0% and 1%; 18 have negative values, and the remainder have high positive values (Figure 24). Because global $fGDP_{e+CO2}$ is fairly low (7.4%) and the majority of lower country energy cost shares are around 3-5%, those nations receiving damage 'refunds' end up with very inflated negative cost shares. Russia's carbon cost share for the balance distribution is -8%; Indonesia's -21.5%; Iraq's -46%. The adjustment to global energy and carbon share values works at the cost of massively variable amounts of carbon cost share proportions for all countries involved.

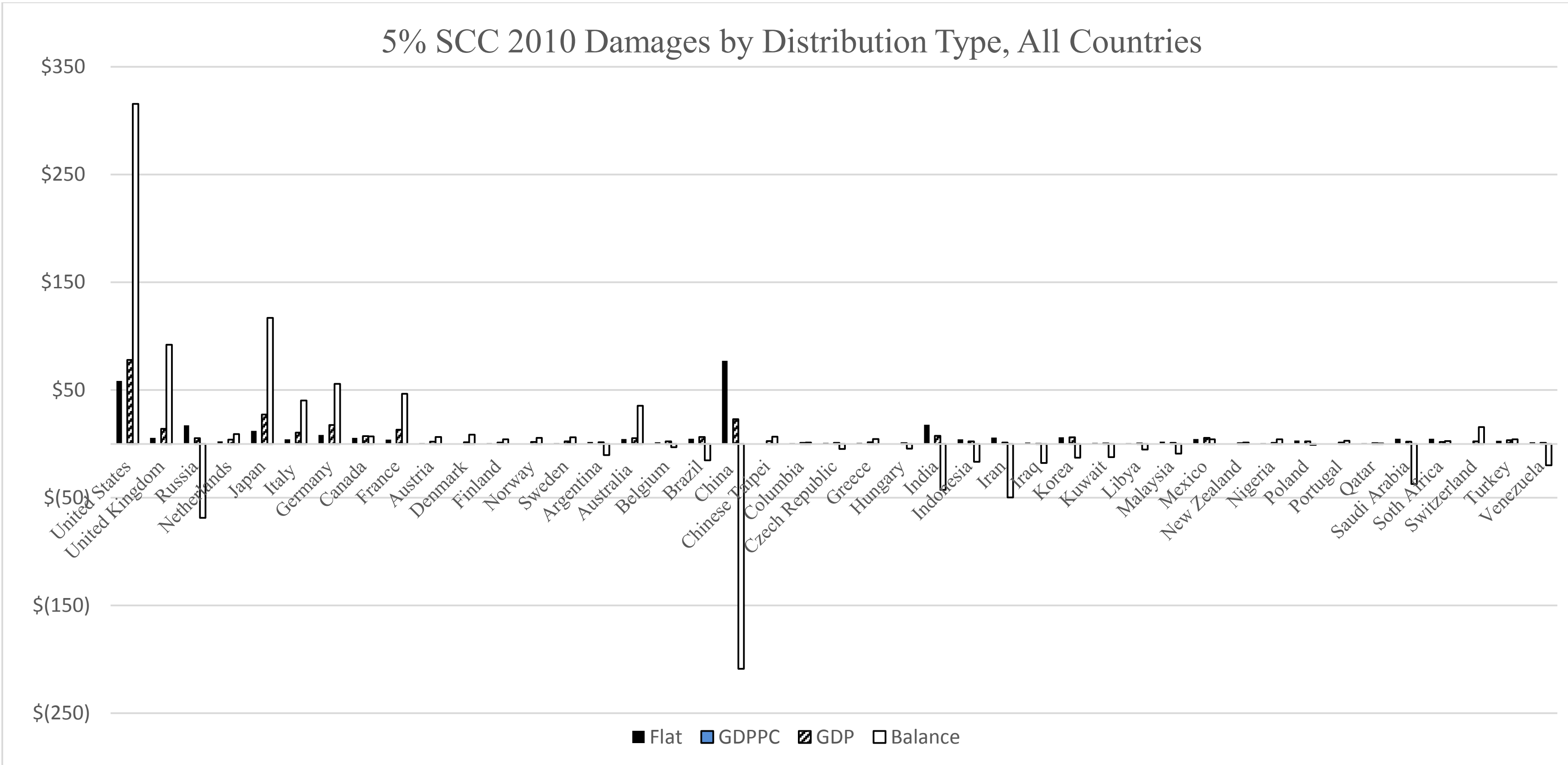


Figure 23. Damages for all countries by distribution type, 2010, 5% SCC value. Balance included to show variation between amounts in damages for that distribution type vs. the three others.

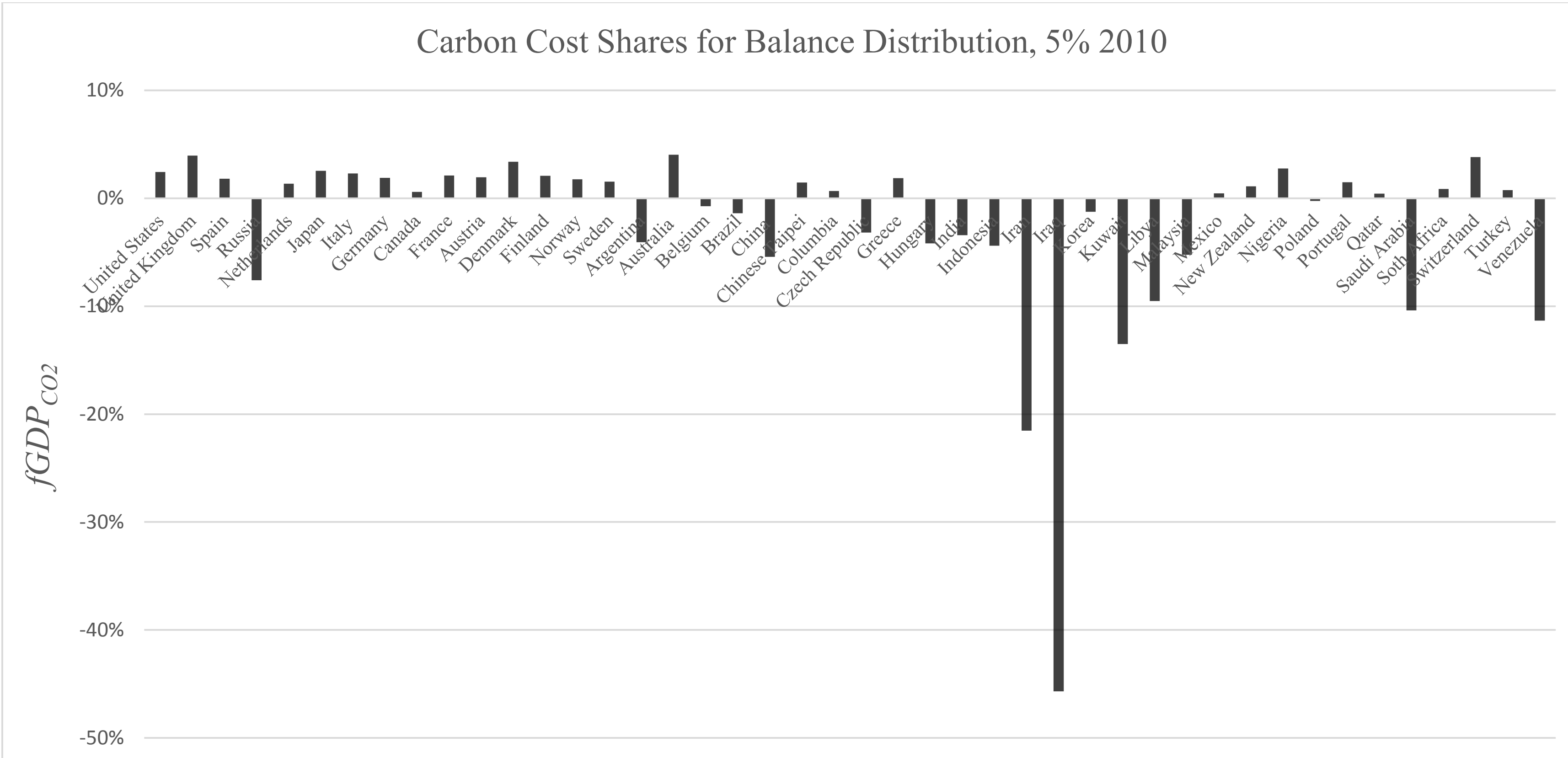


Figure 24. Carbon cost shares for all countries for the balance distribution for 5% SCC value for 2010. The balance distribution results in wildly variable $fGDP_{CO2}$ values, and many oil-exporting nations have a large (>5%) negative $fGDP_{CO2}$ amount.

3.4.5 Tax Preference

The balance tax favors those nations with high starting energy cost shares. Many of these nations are also oil exporters. Russia, Venezuela, Saudi Arabia, Libya, Kuwait, Iran, and Iraq all end up with large damage refunds, and all of these nations have energy cost shares significantly higher (>10%) than global $fGDP_{e+CO2}$. This result is an artifact of an assumption in the calculation of $fGDP_e$. Expenditures are calculated as prices as not as costs for energy, and the result for large oil-producing and exporting countries is an inflated expenditure value. The true 'expenditures' amount for these nations (re: costs rather than prices) would likely adjust their energy cost share values downwards.

On the other side, high importers (>50% of net consumption) tend to prefer the Flat and GDP distribution types. These nations almost overwhelmingly have lower CO_2 emissions, higher GDPs, and lower $fGDP_e$ values, meaning high positive damage spikes for the balance and GDPPC distribution types.

I note that while the GDP tax seems attractive overall because the smaller amount of variation in proportional carbon spending across countries than other taxes, the 0.6% value versus GDP holds true only for the 5% SCC value. The Stern SCC amount brings that carbon cost share up to 6% for every country, which in many cases (primarily European nations) is more than their energy cost share $fGDP_e$ value.

3.5 CO2 DAMAGE AND COST SHARE PROJECTIONS

I consider scenario projections for the purpose of looking at a possible range of high and low CO_2 cost share for the world (not world-44) by 2050. I look at these values primarily in comparison to the results for 2010 to look at the potential for steadily-increasing carbon cost shares in the near future.

Projections for CO_2 damage amounts in billions and carbon cost shares for the 5% and Stern cases for all five scenarios for 2015-2020 are shown in Figure 25. CO_2 emission projections for the business-as-usual "BAU" scenario come from the IEA 2014 Energy Technology Perspectives 6C Scenario. CO_2 emission projections for the other four scenarios are specific to each scenario model. Numbers for those emission values and GDP values for these five scenarios are attached in Appendix 3. I will reiterate that results for projections are for the world as a whole, not for only the world-44 subset, which, in 2010, accounts for 92% of GDP and 87% of CO_2 emissions.

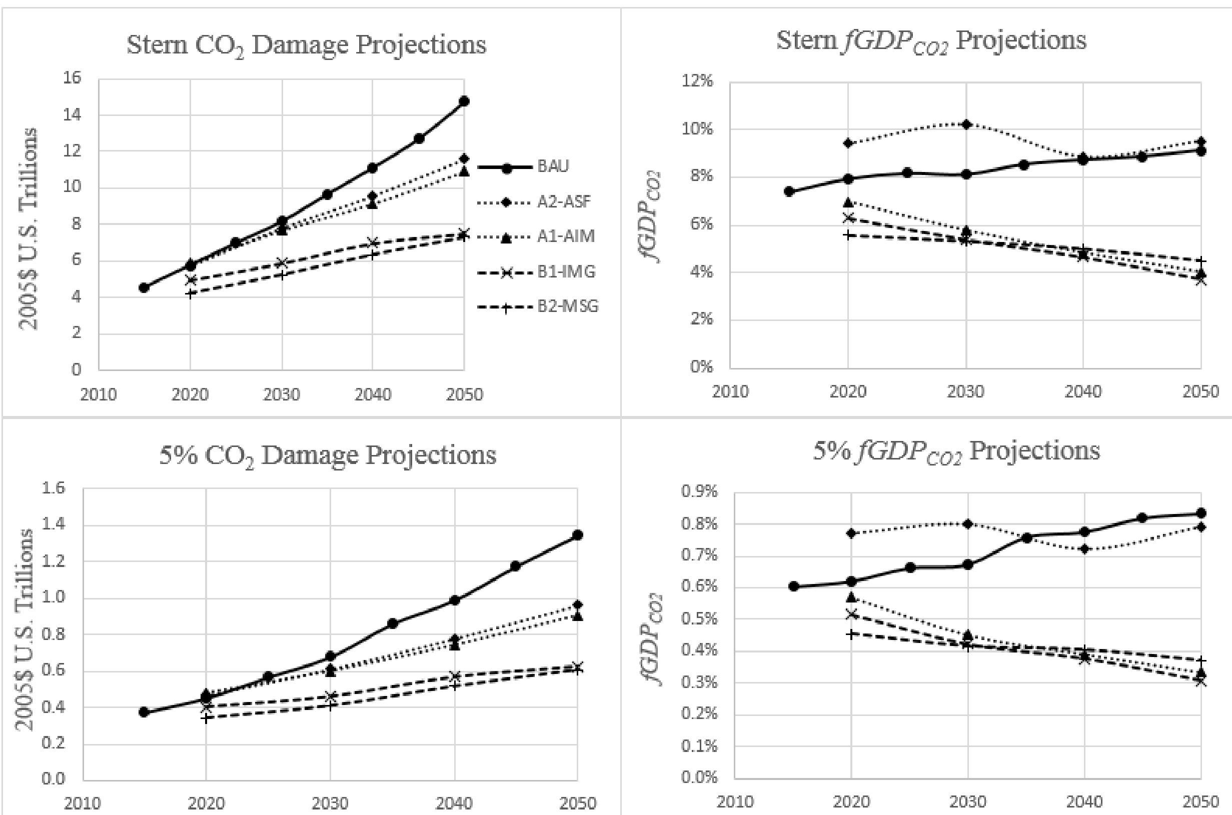


Figure 25. Projections for CO_2 damages in 2005$ U.S. Trillions and carbon cost shares for Stern and 5% SCC value. Projections are for four IPCC marker scenarios and one IEA

The carbon cost share value for the world in 2010 is 0.6% for the 5% SCC case, and 11.7% for the Stern SCC case. Though the damage amounts increase from 2015-2050 (Figure

23/24), the carbon cost share values do not vary far from the values for 2010 (Figure 25). For the 5% value, $fGDP_{e+CO2}$ drops to ~0.3-0.4% of global GDP in three IPCC (B2-MSG, B1-IMG, and A1-AIM) scenarios; it increases to 0.8% only in the BAU and A2-ASF projections. For Stern values, I similarly end up with projections of ~4% or 9% of GDP by 2050. These values are significantly higher than the Stern-recommended "1% of global expenditures" towards climate mitigation, but the lower-end estimations of carbon damage (4%) fall within line of other IPCC estimations for permanent global losses given Temperature increases (IPCC 2007b).

These two SCC values give us a range of carbon damages accounting for anywhere from ~0.4% to ~9% of global GDP by 2050. This is a large range, and I might consider the probability of numbers more towards the Stern side of the scale given the general underestimation of SCC values (Pindyck and Wang 2013) and the lack of accountability for catastrophic temperature increases.

Chapter 4: Discussion

The question I seek to answer with this thesis is whether recent history and near future energy metrics suggest that the world has or is approaching a point of diminishing returns with regards to sustainability of increased energy production and continued global economic growth, i.e. is depletion outpacing the capability of technological innovation to produce cheap fuel.

Our results for $EROI_{direct}$ do not suggest that the global economy is approaching this threshold. This global $EROI_{direc}$ value has been relatively stable over the whole 1960-2010 time period, and the generally flat nature of the profile suggests that the world as an ‘energy source’ can maintain its self-sustainability by either developing technologies able to extract energy from difficult sources at a similar rate energetic rate to past source locations, or that any less-efficient direct production has been offset by technological improvements in production from other energy sources. I reiterate that this result holds true only for direct energy sources, and in this way, it seems that the world has been quite able to balance the conflict between forces of innovation (Darwinian) and depletion (Malthusian). Were data available such that a global $EROI_{direct+indirect}$ value could be calculated, I would be better able to make conclusions with regards to the historical trends toward depletion or innovation.

Though $EROI_{direct}$ has remained fairly similar over time, $EROI_{direct+indirect}$ for global fuel sources (e.g. oil and gas) has been decreasing since the mid-20th century (Gagnon et al. 2009). Coupled with the peaking of global energy cost shares coinciding with dips in global economic growth rates (King), it is likely that the main threat to continuing sustainability of economic growth lies within the frame of affordability of indirect energy inputs towards energy production.

Many countries are in the process of transitioning into renewables and away from oil and gas as primary energy sources. A primary concern for many of these countries is the potential of damages concomitant with the potential for irreversible climate change, and a shift to renewable technology from oil and gas is a simple, if not cheap, way to reduce CO_2 emissions whilst not drastically reducing energy consumption demand.

Our results look at the potential for carbon to inflict damage on growth potentiality in another manner: by internalizing emissions such that each ton comes with an equivalent price assigned to the theoretical damage caused by one ton. By internalizing damages while assuming no real abatement policy is in place, I can look at CO_2 as a resource similarly to how I look at fuel sources in the introduction—as the equivalent of a binding resource such that a natural threshold exists for combined carbon and energy shares above which the global economy cannot maintain its continued growth. I theorize that CO_2 can be limiting in several ways similarly to how energy acts as a limiting resource for economic growth.

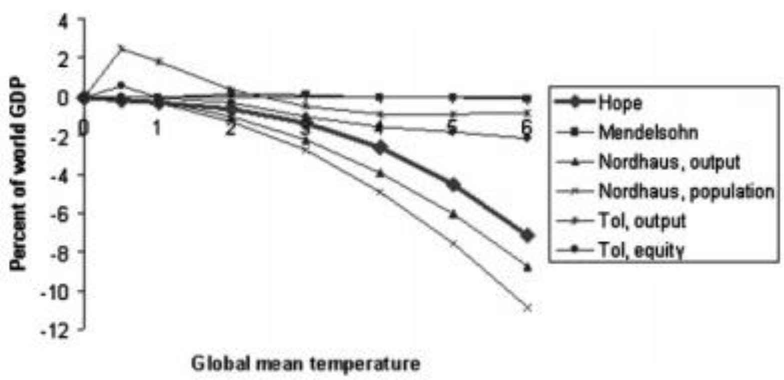


Figure 26. Climate change damage as percent of world GDP against increases in global temperature for a given year for various IAMs. Hope (PAGE), Nordhaus (DICE), and Tol (FUND) are the primary models used for estimation of the SCCs used in this thesis. Figure taken from Dietz and Stern, 2008.

Our results suggest that 2010 damages lie anywhere between \$300 billion to \$6.4 trillion 2005\$ U.S., at a range of 0.6% to 12% of global GDP. The high upper end is the result of the Stern Review SCC estimation of ~\$128 / (metric) ton CO_2. The other four SCC values put damage estimations for 2010 between 0.6%~4% of global GDP. These results are in line with results from other sources and other ways of looking at carbon costs. Figure 26 from Dietz and Stern (2008) shows a range of damage estimates from several other IAMs, with a mean loss of ~3% of GDP for a 5°C temperature increase for any given year. The IPCC (2007b) puts loss estimations at 1-5% for 4°C of warming. I run into danger of a cyclical argument here, so I compare our results for carbon damage estimations with two other ways of looking at carbon and its cost: a 'willing to pay' risk aversion price and costs for abatement policies.

As discussed earlier, one of the flaws of IAMs is their inability to calculate damages for temperature increases greater than ~5°C, so any damages resulting from catastrophic outcomes (T increases of ~7, 8°C) are not estimated and the SCC is generally undervalued as a result (Pindyck and Wang 2013). Pindyck (2012, 2013) analyzes the SCC in a different manner. He estimates a value he calls "willingness to pay" (WTP) for a society in percentage of global GDP that is essentially an annual risk-aversion tax, i.e how much the world would be permanently willing to pay to avoid a catastrophic climate outcome, rather than to pay damages after it has occurred. Pindyck has several studies estimating WTP values; his estimation of WTP (T), or the WTP value for a function of temperature, generally yielded values around ~2% of consumption (2012). A second study focused on WTP as a function of prevention of shocks to global capital stocks (impermanent damages). Pindyck finds that a 1-2% permanent annual tax would be sufficient to prevent losses up to 20 or 25%, and a 7% annual tax would be sufficient for losses not exceeding 15%. By comparison, effective GDP damage for a catastrophic climate outcome as 10-30% of global GDP (Pindyck 2012, Stern 2006)

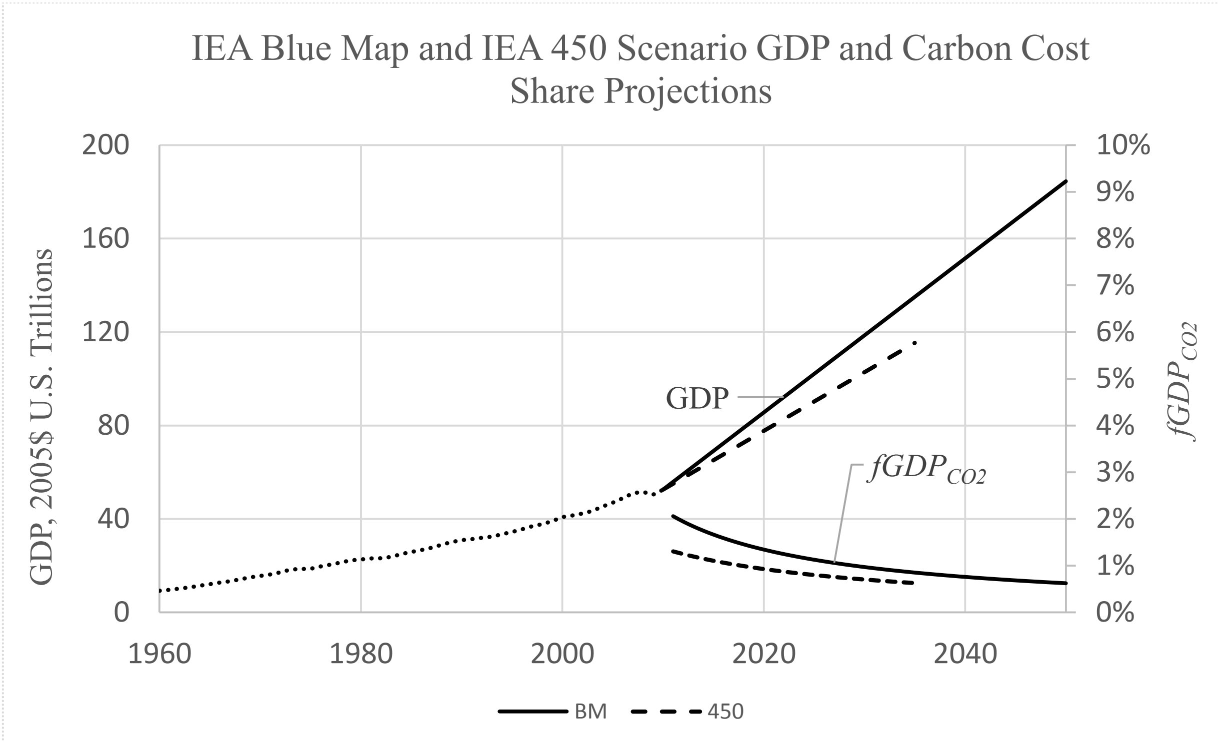


Figure 27. Projections for GDP and carbon cost shares for 2010-2050 for the IEA Blue Map (BM) and IEA 450 (450) abatement scenarios. GDP projection values are calculated from scenario-specific TPED and energy intensity assumptions. Carbon cost share values are calculated from GDP and scenario-specific abatement cost assumptions. Data come from IEA World Energy Technology and IEA World Energy Outlook 2010, and Loftus et al., 2015.

Damage projection values for the 5% SCC value suggest a range between 0.4%-0.8% of global GDP for carbon cost shares by 2050. This estimation is in similar to estimations by Pindyck (for risk-aversion payments) and also agree with estimates in future costs for a few abatement policies. Loftus et al. (2015) surveyed a number of abatement policies. I compare the outlook of carbon cost shares for the IEA 450 Scenario (stabilizing atmospheric CO_2 concentrations at 450ppm) and IEA Blue Map Scenario (reducing carbon emissions by 50% by 2050) to my results. I calculate projected GDP for both scenarios by using present-day global TPED and scenario-specific TPED targets and energy intensity decline rate assumptions. I calculate projected carbon cost shares from these GDP values and the assumed economic costs as identified by Loftus et al. (2015). Figure 27 shows projections for 2010-2050 for both GDP and carbon cost share for these Blue Map and 450 Scenarios. Carbon cost share estimations for both abatement policies decrease over time to ~0.6% of global GDP for costs. Loftus et al. (2015) notes that an inherent problem with this cost assumption is that these abatement policies (and others) have idealized energy intensity and carbon intensity decline rates. The IEA 450 scenario assumes an E/GDP decline rate of 2.5% per year, and Blue Map 2.6%/year. The average E/GDP decline rate over the last 40 years was 0.8%, peaking at 1.8% (Loftus et al., 2015). Figures 28 and 29 show GDP and carbon cost share projections for both scenarios adjusting for these more realistic decline rates. Each scenario has GDP and $fGDP_{CO2}$ values for three E/GDP decline rates (the original, 1.8%/yr, and 0.8%/yr). Adjustment for lower decline rates results in carbon cost shares ending at ~1.0% (450, 0.8%) to ~1.3% of global GDP (Blue Map, 0.8%). In making these adjustments I am assuming that TPED is remaining the same, and only GPD growth slows with regards to energy intensity changes.

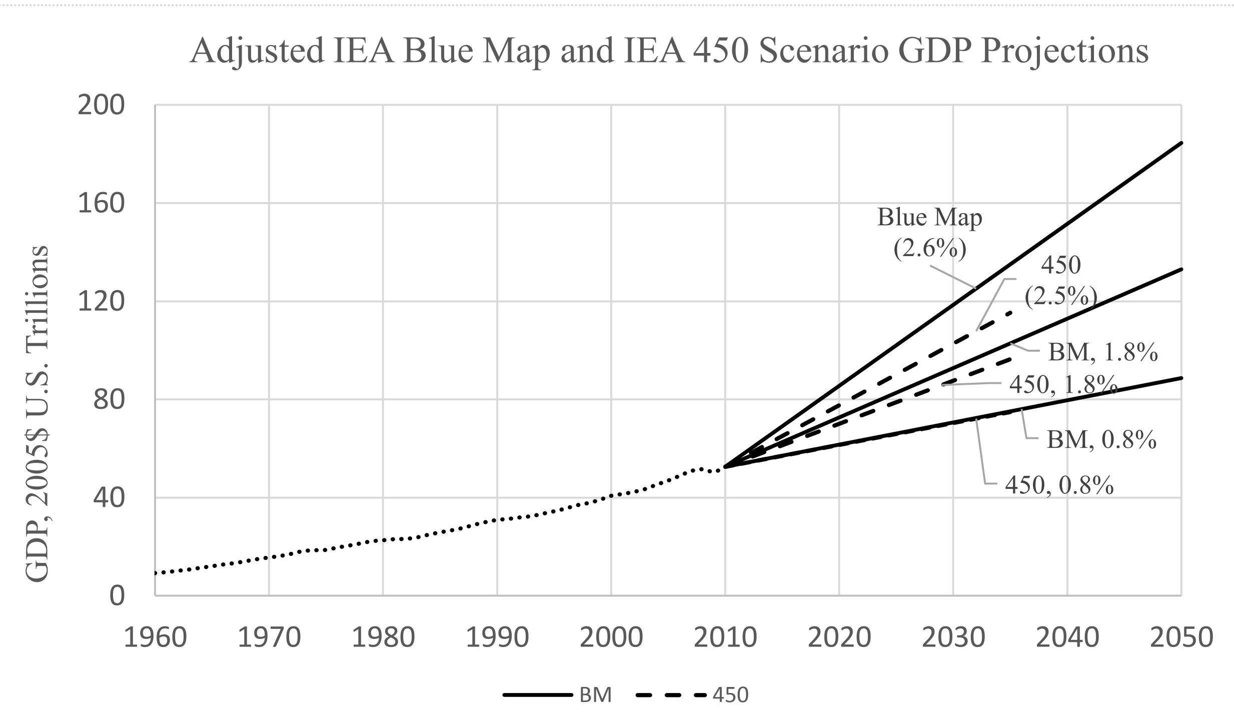


Figure 28. Projected GDP values in 2005$ U.S. Trillions for IEA BM and IEA 450 Scenarios adjusted for lower energy intensity decline rates. The -1.8%/yr rate corresponds to the highest point of energy intensity decline over the last 40 years; the -0.8%/yr rate corresponds to the average energy intensity decline rate over the same time period. Decline rate adjustment noticeably affects future GDP estimates.

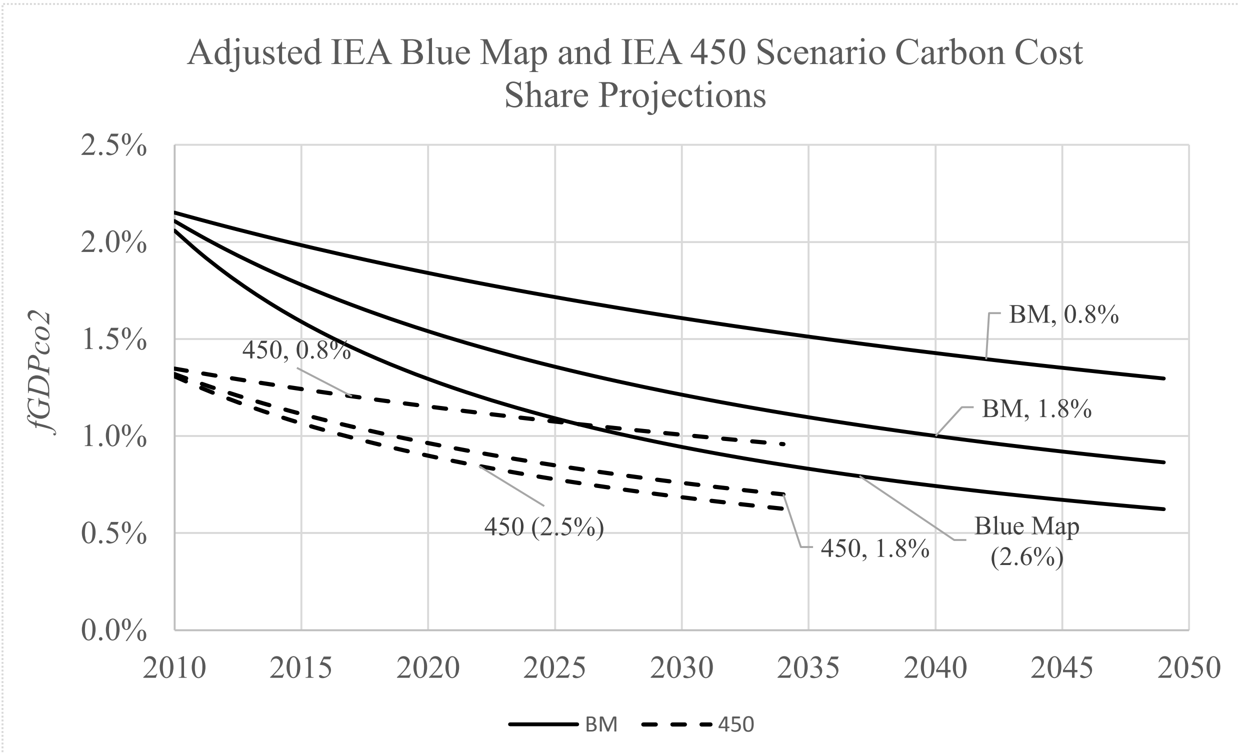


Figure 29. Future $fGDP_{CO2}$ values for the IEA 450 and IEA Blue Map scenarios adjusted for lower, more realistic (0.8%, 1.8%) energy intensity decline rates.

While none of these values—SCC values, Pindyck, nor the abatement scenarios—seem to account for a loss in GDP growth rate with temperature increases, an adjustment for that value would likely have little effect on the resulting carbon cost share value. Ultimately, all three manners of analyzing carbon—as present or future damages, aversion tax payments, and reduction abatement payments—end up with results suggesting a (sometimes permanent) global cost on the order of ~1-4% of GDP.

The potential for carbon cost shares to limit economic growth, then, rely upon their interaction with energy cost shares. Let us consider that:

- Temperature is increasing; GDP growth rates should simultaneously decrease (Bansal and Ochoa 2011, Dell Jones and Olken 2012, Stokey 1998)

- Industrialization of non-Annex-1 nations has the future potential to emit more than the cumulative sum of CO_2 emitted in the 19th and 20th century (Anderson and Bows 2011)
- I have passed the point of cheapest energy (King 2015-submitted)
- Historical peaks in energy cost shares of ~8% have coincided with economic slowdowns (King 2015-submitted), or transitions between lower to higher economic growth rates (e.g. values for the U.K. dropped below 10% near WWI coinciding with higher economic growth)

The energy cost share for 2010 was 6.8%. An addition of a ~1-4% of global GDP assigned towards carbon payment brings the combined global $fGDP_{e+CO2}$ value to ~8%-12%. While this analysis does not provide the specific value for $fGDP_e$ that acts as a threshold limiter to growth, a flat 1-4% increase in that value is an equivalent value by which the world approaches that number.

Chapter 5: Conclusion and Further Research

5.1 Conclusion

In this thesis I used data from the IEA to calculate $EROI_{direct}$ and $fGDP_e^{-1}/EROI_{direct}$ values for 44 countries and the world for 1960-2010 and 1978-2010. I additionally used estimations from several IAMs and future projection scenarios to estimate global CO_2 damages and $fGDP_{CO2}$ values for 2010-2050 for the same data set for 5 different values of SCC. This work builds off the studies done by King and Maxwell who first calculated a value for the global energy cost share, and was completed with the intent of furthering their discussion of the possibility of these energy metrics indicating the potential for the global economy to reach a threshold to growth in the near future.

I conducted the analysis of $EROI_{direct}$ at the national and global level rather than by the traditional manner of studying specific energy sources with the intent of framing the globe as its own ‘fuel source’ with the potential of decreasing to reach the 1:1 threshold of usefulness. I similarly look at carbon cost shares on the global scale in comparison to historical energy cost share value peaks to understand the potential for CO_2—whether through costs occurred in abatement policies or through effective damage from continued high level of current and future emissions—to add to the total cost of energy by an amount sufficient enough to threaten a slowdown to global economic growth. Both these analyses were completed within a frame of reference that suggests that the continued expansion of civilizations (e.g. economic growth) is ultimately limited by constraints on the availability of energy (quality or quantity) and with the knowledge that consumption of both traditional high-quality fuel sources and other resources have since passed their peak as a result of declining reserve amounts.

Our results suggest that direct energy-based production of energy has changed little over time, and so the effects of depletion with regards to fuel sources show particularly with indirect inputs (capital, energy directed towards construction of machines that extract energy). These results become potentially concerning when combined with trends for global energy cost shares and the internalization of carbon damages. King (2015) and Maxwell (2013) have shown that historical values of global $fGDP_e \approx$ 8-10% have coincided with points of slowdown in economic growth, and that I have passed the point of cheapest energy. With a 2010 value of 6.8%, global energy cost shares could easily reach that 8-10% threshold given internalization of carbon expenditures, whether for damage payments or abatement policies. The question that remains is: is the current global economy is structurally equivalent to the one in the 20th century such that a $fGDP_{e+CO2}$ value of 10% would be proof positive of the globe reaching its growth restraint threshold. Though I do not know the specific value $fGDP_e$ at which this threshold lies, the general estimation from our results and from various suggested abatement and risk-aversion policies suggests the possibility of up to a ~1-4% of global GDP annually through to 2050 by virtue of carbon-related activities.

5.2 Further Research

There are several avenues for further research. In addition to adding onto the set with years past 2010, I could attempt to improve the dataset for EROI and EIOU values, both by including additional countries into our 'world' set, further refining values for missing conversion factors, or similarly to the work by King and Maxwell, making estimations for countries for years with missing data. A second avenue for improvement would be to attempt to calculate country-based total annual indirect expenditures in order to make some estimation for a country based $EROI_{direct+indirect}$ in order to better trace the intensity of capital inputs and depletion effects over time. A third would be to attempt to adjust national energy cost shares to include prices for secondary energy consumption and to look further into the issue of adjusting for debt values with regards to the inverse energy cost share to $EROI_{direct}$ ratio term. A more accurate value for this ratio would similarly help in the study of historical trends.

In terms of the carbon cost share, it would be helpful to look further into the areas of payments for catastrophic climate damages. The general state of uncertainty surrounding the 'true' SCC value is exacerbated by the lack of estimation corresponding to apocalyptic outcomes. Estimates including adjustments for low-probability, high-damage outcomes would help narrow down the range for potential carbon cost shares in the near future. I would also look into expanding the list of economic figures for abatement scenarios in order to better understand the true range of global costs proposed. Including research from studies showing the relationship to temperature loss and GDP growth (Bansal and Ochoa) might also help to frame projected values for GDP growth beyond estimations of energy intensity and energy demand growth rates.

Appendices

Appendix 1

I. Countries:
    i. 1960-1989: : Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, UK, US
        1. Missing Years:
            a. Czech Republic 1960-1970: Production and EIOU
            b. Finland 1960-1973: Production
            c. Hungary 1960-1964: Production and EIOU
            d. Korea 1960-1970: Production and EIOU
            e. Mexico 1960-1970: Production and EIOU
            f. Sweden 1968-1973: Production
            g. Switzerland 1960-1973: Production
    ii. 1990-2010: 1960-1989 plus Argentina, Brazil, China, Chinese Taipei, Colombia, India, Indonesia, Iran, Iraq, Kuwait, Libya, Malaysia, Nigeria, Qatar, Russia, Saudi Arabia, South Africa, Venezuela

II. Production Source Flows
    a. Primary Coal Products
        i. 1960-1977: Hard Coal, Brown Coal (aggregate groups)
        ii. 1978-2010: Anthracite, Coking Coal, Other Bituminous Coal, Sub-bituminous Coal, Lignite
    b. Primary Oil Products
        i. 1960-1970: Crude Oil/NGL/Feedstocks (aggregate group)
        ii. 1971-2010: Crude oil, NGL
    c. Natural Gas
    d. Renewables
        i. Nuclear, Wave/Tide/Ocean, Hydro and pumped Hydro, Solar, Wind, Geothermal

III. EIOU Source Flows
    a. Coal
        i. Primary Coal Products
        ii. Derived Fuels
            1. Peat, Patent Fuels, Coke-oven coke, gas coke, coal tar, briquettes (BKB), gas works gas, coke oven gas, blast furnace gas, other recovered gases
    b. Oil
        i. Primary Oil Products
        ii. Secondary Oil Products
            1. Additives/blending components, refinery feedstocks, refinery gas, ethane, liquefied petroleum gases, motor gasoline, aviation gasoline, gasoline type jet fuel, kerosene type jet fuel, other kerosene, gas/diesel oil, fuel oil, naphtha, white spirits & SBP, lubricants, bitumen, paraffin waxes, petroleum coke, non-specified oil products, heat output from non-specified combustible fuels
    c. Natural Gas
    d. Electricity
        i. Electricity
        ii. Heat

iii. Municipal waste (non-renewable)
iv. Renewables
1. Elec/heat output from non-specified manufactured gases
2. Industrial waste
3. Municipal waste (renewable)
4. Primary solid biofuels
5. Biogases
6. Biogasoline

IV. Calculations

a. Crude Oil
i. Conversion Factors for crude oil do not appear in the IEA statistics database until 1971; from 1960-1970 energy densities are grouped under an aggregate "crude oil/NGL/feedstocks" energy density. In order to estimate production and EIOU for the following countries for 1960-1970, the relevant aggregate conversion factor was used as a substitute:
1. 1960-1970: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Turkey, UK, US
2. Hungary: 1965-1970; New Zealand: 1964-1970; Switzerland: 1963-1970

b. Gas
i. Natural gas, gas works gas, and coke oven gas were converted from gross to net TJ by multiplying by a factor of 0.9 (IEA Energy Statistics Manual, 2014)

c. Coal
i. Some countries lacked conversion factors for individual or groups of years for production or EIOU. Replacement energy densities were estimated using the following protocol:
1. Using the chronologically nearest conversion factor from the same country and coal sub-type, e.g. a missing anthracite value in 1965 replaced using the 1966 value
2. Using the chronologically nearest conversion factor from the same aggregate group, hard coal or brown coal
3. Using the "average" energy density value for the specific sub-type as defined by the IEA energy statistics manual

ii. Substitutions were similarly used for coal for those countries missing specific years. Following are the countries needing estimates, years and sub-types missing conversion factors, and the conversion factor used:
1. Country: Missing (Used)
2. Australia: Coking Coal 1978-2010 (Hard Coal 1977), Anthracite 1978-2010 (Hard Coal 1977)
3. Belgium: Coking Coal 1987, 1988 (Coking Coal 1986)
4. Canada: Coking Coal 1978-2010 (Hard Coal 1977), Sub-bituminous 1981-1983, 1986-2010 (Sub-bituminous 1985), Lignite 2007-2010 (Lignite 2006)
5. Czech Republic: Coking Coal 1978-1984, 2002-2010 (Coking Coal 1985, 2001)
6. Denmark: Brown Coal 1968-1970 (Brown Coal 1967)
7. France: Coking Coal 1978-1995 (Hard Coal 1977)
8. Germany: Coking Coal 1978-2010 (Hard Coal 1977)
9. Italy: Coking Coal 1978-2010 (Hard Coal 1977)
10. Japan: Anthracite 1990 (Hard Coal 1977)

11. Mexico: Hard Coal 1971-1977 (26300 kJ/kt), Coking Coal 1978-2010 (28200 kJ/kt), Sub-bituminous 1981-2000 (Sub-bituminous 2001)
12. Netherlands: Brown Coal 1960-1968 (Brown Coal 1967)
13. New Zealand: Coking Coal 1978-1986, 1998-2008 (Coking Coal 1987, 1989)
14. Norway: Coking Coal 1978-1987 (Hard Coal 1977)
15. Poland: Coking Coal 1978-1995, 2004-2006 (Coking Coal 1996, 2003), Lignite 2007 (Lignite 2006)
16. Portugal: Brown Coal 1960-1969 (12600 kJ/kt)
17. Spain: Anthracite 2004-2005, 2009 (Anthracite 2006, 2008), Coking Coal 1978-1989 (Coking Coal 1990), Sub-bituminous 1994-2010 (Sub-bituminous 1993), Lignite 1978-2007 (Brown Coal 1977)
18. Turkey: Sub-bituminous (1994, 1996-1999, 2001) (Sub-bituminous 1993, 2000)
19. UK: Coking Coal 1992, 1997-1998 (Coking Coal 1991, 1996)
20. US: Coking Coal 1978-2010 (Hard Coal 1977)

d. Renewables
   i. Renewables are defined here as to include nuclear power, solar, hydro and pumped hydro, wind, geothermal, and tide (IEA Energy Statistics Manual, 2014).
   ii. Net GWh were converted to TJ by multiplying by a factor of 3.6
   iii. Nuclear power was further multiplied by 1/3 to account for the IEA's assumed 33% power plant efficiency level for nuclear (IEA Energy Statistics Manual, 2014).

e. Deficit values in \$2005 billion for debt-adjustment
   i. Countries for debt-adjusted "world" set:
      1. Original 1990-2010 set less Czech Republic, Iran, Iraq, Kuwait, Libya, Qatar, and Saudi Arabia
   ii. World deficit values were calculated as the sum of the deficits for the individual countries in the debt-adjusted 'world' data set. These deficit values were back-calculated from available GDP data (2005\$ U.S. billion) and total public plus private gross external debt/GDP from Reinhart and Rogoff (2010):

$$deficit = frac\frac{debt}{GDP_t} - frac\frac{debt}{GDP_{t-1}} * GDP_t$$

V. Results

Table 5. $EROI_{direct}$ for all countries and the world, 1960-2010.

	Australia	Austria	Belgium	Canada	Czech Rep	Denmark	Finland	France	Germany	Greece	Hungary	Italy	Japan	Korea	Mexico	Netherlan	New Zeala	Norway	Poland	Portugal	Spain	Sweden	Switzerlar	Turkey	UK	US	Argentina	Brazil	China	Colombia	India	Indonesia	Iran	Iraq	Kuwait	Libya	Malaysia	Nigeria	Qatar	Russia	Saudi Aral	South Afri	Venezuel	World-44
1960	33.0	11.3	12.3	8.0		18.4		9.4	8.7	2.9		3.9	12.1			8.8	69.7	9.5	21.3	3.3	11.1	1.5		21.0	12.4	11.2																		11.6
1961	34.7	10.6	12.6	8.3		17.1		9.4	8.7	2.8		4.0	10.9			8.7	62.5	7.3	20.4	3.5	10.7	1.5		21.0	12.3	11.2																		11.5
1962	34.2	10.2	12.3	8.6		15.0		9.3	8.9	3.1		3.8	10.8			8.2	59.9	8.6	19.9	3.2	8.7	1.1		22.6	13.0	11.2																		11.5
1963	34.6	10.8	12.2	8.8		12.6		8.4	8.7	3.9		3.3	9.7			8.1	51.2	6.5	19.3	2.8	7.5	0.9		22.7	13.2	11.2																		12.3
1964	37.9	11.0	12.0	8.8		10.8		8.3	8.1	4.0		2.8	8.1			7.2	54.2	5.9	18.7	2.6	6.4	0.9		24.8	12.5	12.5																		11.3
1965	37.4	11.7	11.3	8.9		10.3		8.7	7.4	4.9	25.6	2.3	7.4			7.3	49.4	4.5	18.1	2.4	7.0	0.6		25.9	12.1	11.2																		11.6
1966	36.5	11.8	10.7	8.5		8.2		7.9	7.3	3.4	24.7	2.0	5.9			8.2	46.1	3.9	18.0	2.4	5.5	0.3		22.1	11.0	11.8																		11.9
1967	37.8	11.3	10.3	8.7		5.9		7.3	7.1	2.9	22.7	2.0	4.7			10.6	44.7	2.0	17.9	2.2	5.0	0.0		24.4	10.8	12.1																		11.6
1968	42.1	10.0	8.7	8.7		3.8		6.3	6.7	3.3	22.3	2.0	4.1			16.3	36.8	1.4	18.0	2.0	3.7			20.4	9.9	11.7																		10.9
1969	46.6	8.4	6.9	8.7		1.7		5.9	6.8	3.6	20.6	2.1	3.2			21.6	31.3	1.5	18.2	1.3	4.0			20.2	8.7	11.1																		11.1
1970	47.5	7.0	6.1	10.6		0.5		3.8	8.3	3.9	21.5	2.1	2.6			6.3	9.6	1.7	18.0	0.5	3.5			16.5	7.8	10.8																		10.3
1971	48.4	6.2	6.1	10.8	28.3	0.0		3.3	8.3	5.1	17.3	2.2	2.1	11.3	9.7	7.9	8.4	3.0	17.7	0.4	3.0			19.3	8.4	10.9																		11.3
1972	61.8	6.0	5.0	11.4	27.4	0.6		2.9	8.4	4.4	16.5	2.2	1.6	10.3	7.6	9.9	7.5	9.8	18.6	0.4	2.5			15.7	7.7	10.4																		11.3
1973	58.2	6.3	4.3	11.8	26.2	0.7		2.5	8.2	3.1	16.1	2.1	1.2	8.6	6.3	11.3	7.4	9.4	18.4	0.3	2.4			10.5	7.7	9.8																		11.4
1974	14.8	7.5	3.8	13.3	26.1	1.0	1.5	2.9	8.3	3.0	15.5	2.4	1.5	8.3	7.2	14.0	13.2	23.3	18.6	1.9	3.3	14.9	4.8	8.9	7.6	11.3																		11.3
1975	16.2	6.9	2.8	12.5	24.8	0.3	1.6	2.9	8.4	4.0	15.5	2.4	1.5	9.3	13.0	16.9	16.5	25.9	18.8	1.7	3.3	10.3	6.8	9.0	9.3	10.7																		11.3
1976	15.9	5.6	1.8	12.7	24.6	0.4	1.2	2.4	8.3	5.0	15.4	2.3	1.4	7.1	13.2	17.5	16.6	25.4	17.9	1.3	2.9	7.1	5.5	8.9	9.9	10.5																		11.3
1977	16.3	6.6	1.6	12.4	25.1	1.1	1.4	2.7	8.2	5.3	15.5	2.2	1.4	6.7	11.3	18.0	17.5	21.6	17.2	2.5	3.5	6.6	7.4	8.9	12.2	10.6																		11.6
1978	15.3	6.0	1.7	11.5	24.6	0.9	1.2	2.6	8.2	5.2	16.4	2.2	1.3	4.6	14.1	17.7	16.6	27.0	17.7	2.3	3.6	7.2	6.8	9.0	12.6	11.3																		11.6
1979	16.9	6.0	1.5	13.9	25.3	0.8	1.3	2.5	8.0	4.6	14.4	2.3	1.3	3.6	15.0	17.2	14.3	36.1	18.4	2.2	4.1	8.1	6.4	8.8	14.4	13.1																		13.5
1980	17.3	5.5	1.5	13.6	24.0	0.6	1.3	2.4	8.1	4.8	14.4	2.1	1.4	3.5	15.5	17.9	12.7	36.7	17.7	1.7	3.8	6.6	6.7	8.1	15.2	13.7																		14.1
1981	20.0	5.1	1.6	13.5	24.3	1.6	1.9	2.5	9.0	5.5	14.0	2.3	1.4	3.2	17.2	17.7	13.4	36.9	16.1	0.9	4.5	6.6	7.4	9.3	17.3	13.3																		14.3
1982	19.6	5.5	2.1	14.2	25.1	3.7	2.1	2.7	9.0	7.1	14.9	2.4	1.2	3.0	17.7	14.5	17.4	35.7	18.3	1.3	5.0	5.6	7.6	9.1	17.7	12.9																		13.8
1983	21.6	5.2	2.2	14.7	25.0	4.2	2.1	3.1	9.8	8.8	13.3	2.3	1.3	3.2	20.0	23.7	19.1	35.8	17.8	1.3	5.4	5.2	7.7	8.9	18.1	13.5																		15.1
1984	24.6	4.9	2.3	14.8	25.1	4.6	2.2	3.3	10.5	10.0	12.8	2.5	1.2	4.2	16.7	21.7	21.6	40.4	17.8	1.8	5.3	5.2	6.8	9.2	16.1	13.2																		14.6
1985	25.8	5.0	2.5	14.3	24.3	6.4	1.9	3.0	10.5	11.5	12.0	2.5	1.3	4.8	15.0	21.6	30.6	37.4	17.4	2.3	5.6	5.4	7.1	10.3	17.6	12.8																		14.7
1986	26.4	4.6	2.1	13.1	24.3	7.8	2.1	3.1	9.5	9.3	11.2	2.5	1.3	5.3	13.5	16.5	27.9	26.0	17.8	1.6	5.1	5.2	7.1	11.1	17.7	11.8																		13.4
1987	27.1	4.5	1.8	13.3	23.5	9.5	2.1	3.2	9.7	8.9	10.3	2.8	1.2	4.8	15.7	15.2	19.0	39.1	16.9	1.8	4.7	4.8	7.2	10.3	17.8	11.8																		14.1
1988	23.6	4.9	1.2	12.5	23.5	9.4	2.0	3.0	9.6	10.2	10.1	2.9	1.2	4.0	15.2	10.9	22.7	38.1	16.5	2.0	4.3	4.7	7.7	9.3	16.8	11.7																		13.5
1989	24.3	5.1	1.1	13.0	23.1	10.9	2.2	2.8	9.8	9.8	9.4	2.7	1.1	3.1	14.8	10.7	21.2	44.5	15.5	0.9	4.2	4.8	7.3	10.6	15.2	11.4																		10.4
1990	23.7	3.3	0.8	12.9	16.6	11.8	1.4	2.8	9.2	10.6	7.9	2.9	1.2	3.1	15.9	10.3	19.3	38.2	14.7	1.3	4.1	4.3	7.0	11.0	15.0	11.6	8.0	4.9	17.6	28.3	18.9	11.9	84.7	118.1	20.7	20.6	37.7	92.0	25.0	25.3	32.3	39.6	15.7	23.6
1991	25.3	3.4	0.7	13.5	15.9	12.9	1.6	2.7	8.8	10.6	7.8	3.1	1.3	2.2	13.0	12.3	20.1	44.6	14.9	1.5	3.8	4.0	6.4	10.6	15.0	11.3	7.3	4.8	16.8	27.5	19.1	11.5	82.4	26.8	27.1	24.3	16.5	51.0	17.9	24.4	38.1	39.7	16.7	21.5
1992	27.0	3.6	0.6	13.6	14.3	13.4	1.8	2.7	7.8	12.4	7.4	3.1	1.2	1.5	12.7	11.2	19.0	33.2	14.3	0.8	3.6	6.4	6.9	10.7	14.7	10.8	7.8	5.0	15.1	30.2	19.2	11.0	75.2	31.6	56.7	25.2	18.6	42.9	16.9	23.9	34.2	28.6	14.7	20.6
1993	26.2	3.7	0.6	14.3	15.9	14.4	1.6	2.8	7.2	13.4	7.0	3.2	1.2	1.2	13.0	11.1	18.8	31.9	14.0	1.1	3.5	6.5	7.2	9.5	14.7	11.3	9.9	5.1	13.0	25.7	18.5	11.5	63.8	35.5	46.6	23.4	16.3	43.5	16.3	23.6	36.8	29.6	15.9	20.3
1994	25.2	3.3	0.5	14.3	15.0	14.2	1.3	2.7	6.9	13.0	8.4	3.4	1.1	1.0	12.7	10.7	17.5	32.8	12.2	1.0	3.3	5.8	7.1	10.2	15.7	11.0	12.7	5.0	12.6	28.4	18.7	11.9	68.6	36.7	33.6	22.4	15.6	45.5	15.9	24.9	30.3	30.3	15.4	19.8
1995	26.1	3.3	0.6	14.6	16.4	14.0	1.4	2.6	7.1	13.0	8.7	3.2	1.2	0.9	13.3	10.3	19.2	40.3	12.3	0.8	3.0	6.5	6.5	9.9	15.8	10.9	12.4	5.4	12.6	32.0	18.9	10.4	65.5	37.0	33.3	31.3	17.7	46.2	15.7	21.9	25.5	28.5	15.7	19.2
1996	24.6	3.5	0.5	14.4	14.7	13.7	1.3	2.4	6.8	12.5	8.1	3.2	1.1	0.8	13.9	11.0	19.7	50.3	12.2	1.4	3.1	5.4	5.4	9.8	15.6	11.0	14.1	5.4	12.7	28.2	18.7	11.6	61.5	38.9	34.6	28.7	19.0	47.6	14.6	22.9	24.9	28.5	15.2	19.5
1997	26.7	3.5	0.6	14.4	14.6	16.2	1.5	2.2	6.7	12.2	8.1	3.1	1.1	0.7	14.7	10.2	19.1	40.6	12.7	1.1	2.8	7.0	6.4	9.6	15.7	10.9	14.3	5.3	10.8	30.6	18.0	11.1	60.3	69.9	32.4	28.9	14.1	50.2	16.1	23.2	24.2	27.7	14.2	19.4
1998	26.8	3.5	0.6	14.3	14.1	17.3	1.7	2.1	6.1	12.2	7.2	2.9	1.2	0.7	13.6	9.8	17.4	36.4	11.7	1.3	2.7	7.2	6.1	10.3	15.2	11.1	15.5	6.1	10.3	25.7	17.1	8.8	51.9	93.3	32.9	29.7	15.4	53.0	15.7	21.7	25.2	41.4	14.6	19.6
1999	25.4	3.9	0.7	13.4	13.6	19.3	1.5	2.1	6.4	12.7	7.5	3.0	1.1	0.7	13.3	10.1	18.2	34.8	11.9	0.7	2.3	6.8	7.0	10.6	16.4	10.6	15.0	7.2	10.5	25.9	14.0	11.5	27.0	113.0	26.9	46.4	12.0	46.2	13.9	21.6	23.8	40.3	16.9	19.0
2000	25.2	3.9	0.6	13.7	13.3	22.6	1.6	2.1	6.2	10.9	7.3	3.0	1.2	1.0	13.2	9.8	17.6	54.1	11.2	1.1	2.4	7.2	6.5	9.6	16.4	11.9	15.8	8.4	10.0	26.2	12.8	15.9	30.3	103.0	31.2	35.8	11.7	49.3	20.3	20.6	24.2	40.1	14.5	19.8
2001	26.2	3.6	0.6	13.2	14.1	22.1	1.5	2.1	6.3	10.1	8.1	2.7	1.2	0.9	13.1	10.1	17.8	51.6	11.6	1.3	2.7	8.1	6.9	8.9	15.0	11.6	16.4	6.9	10.3	26.3	12.6	14.7	29.2	95.6	29.3	32.8	12.8	50.8	20.9	21.7	21.4	36.1	16.6	19.3
2002	34.0	3.5	0.6	12.2	12.6	21.9	1.2	2.1	6.3	9.0	8.6	2.6	1.1	0.8	12.9	9.2	17.7	54.1	12.5	0.8	2.4	8.0	5.7	8.4	14.3	11.2	16.1	7.2	10.5	25.8	12.6	13.0	27.0	85.1	25.1	27.9	17.1	42.9	20.8	21.7	19.2	33.7	18.6	18.6
2003	29.9	3.2	0.6	11.5	12.6	20.6	1.1	2.0	6.2	9.4	7.8	2.6	1.1	0.8	12.9	8.6	16.3	50.4	11.9	1.3	2.5	5.7	5.6	8.0	13.8	11.4	16.0	6.8	10.9	29.0	13.0	12.1	26.3	69.4	27.3	31.3	12.5	44.7	19.8	21.5	19.1	39.6	18.0	18.0
2004	29.8	3.0	0.6	12.5	12.5	23.0	1.5	2.0	6.3	10.1	6.1	2.1	1.1	0.8	12.9	9.7	15.9	47.8	12.0	1.0	2.3	5.5	5.0	7.8	12.9	11.1	13.0	6.6	10.7	28.3	13.1	14.5	24.8	89.6	25.7	28.7	11.4	43.3	19.9	22.1	19.7	38.2	20.7	18.3
2005	21.8	2.8	0.7	12.2	12.2	23.1	1.6	2.0	6.6	9.1	7.2	2.0	1.1	0.9	12.4	8.8	13.9	45.4	12.5	0.6	2.1	6.2	4.6	9.3	11.1	10.8	12.5	6.7	11.4	30.9	13.0	16.7	22.1	81.5	30.1	55.3	10.1	39.6	18.3	20.5	19.7	34.8	17.5	17.8
2006	22.1	2.7	0.6	12.4	12.2	20.3	1.2	2.2	6.3	7.6	5.9	1.9	1.1	0.9	12.0	8.3	13.9	42.6	12.0	1.9	1.6	5.4	4.3	9.9	10.7	10.9	12.5	6.6	11.8	37.6	12.4	19.5	24.4	85.2	31.0	79.9	9.2	40.6	16.3	18.8	18.9	37.9	10.9	17.9
2007	22.4	2.8	0.6	11.8	11.9	18.9	1.2	2.1	6.1	6.6	4.7	1.8	0.9	0.8	11.0	11.2	14.9	41.0	10.4	1.2	1.6	5.7	5.5	10.1	10.7	11.0	11.8	6.1	11.8	38.8	12.2	21.8	23.9	92.3	28.2	90.1	8.8	41.0	16.3	18.3	19.9	37.7	9.3	18.0
2008	22.9	2.5	0.6	11.7	11.7	19.2	1.4	1.9	6.0	7.3	5.7	1.8	0.9	0.7	10.1	12.3	15.4	40.8	10.3	1.3	1.5	5.3	5.1	13.6	10.4	11.3	11.0	5.4	12.2	40.3	12.6	22.0	24.4	99.1	27.7	86.9	7.4	36.6	19.1	18.9	21.4	36.1	8.4	18.4
2009	22.9	3.0	0.7	11.2	11.9	17.2	1.2	1.8	5.7	6.9	5.7	1.9	1.0	0.7	9.5	11.1	15.5	40.7	10.4	1.3	1.7	4.9	5.2	8.7	10.2	11.2	10.2	5.8	12.6	33.2	14.1	23.2	24.9	111.9	23.9	71.5	10.4	72.0	17.4	19.3	19.2	36.9	8.3	19.0
2010	22.6	2.7	0.6	11.8	11.8	17.0	1.2	2.0	5.4	7.6	5.1	1.9	0.9	0.6	8.9	12.3	16.1	39.5	9.8	1.9	1.8	5.1	5.5	9.3	9.5		9.8	6.2	12.7	36.7	12.3	25.2	27.1	98.1	21.4	66.5	16.6	67.2	19.9	21.2	16.6	40.3	9.2	20.3

Figure 30. Net imports:consumption vs. EROI$_{direct}$, 2008.

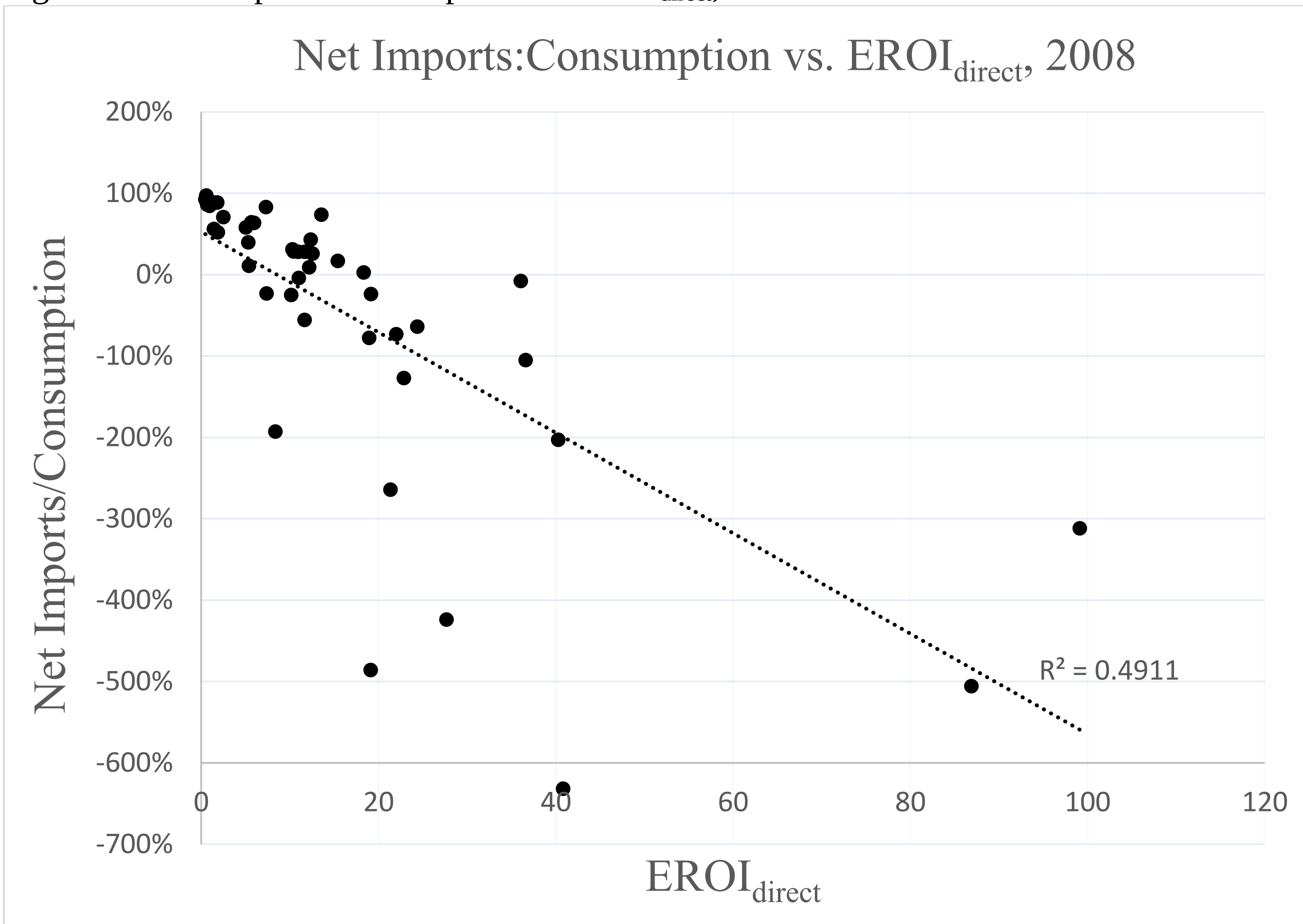


Figure 31. Net imports:consumption vs. $EROI_{direct}$, 2005.

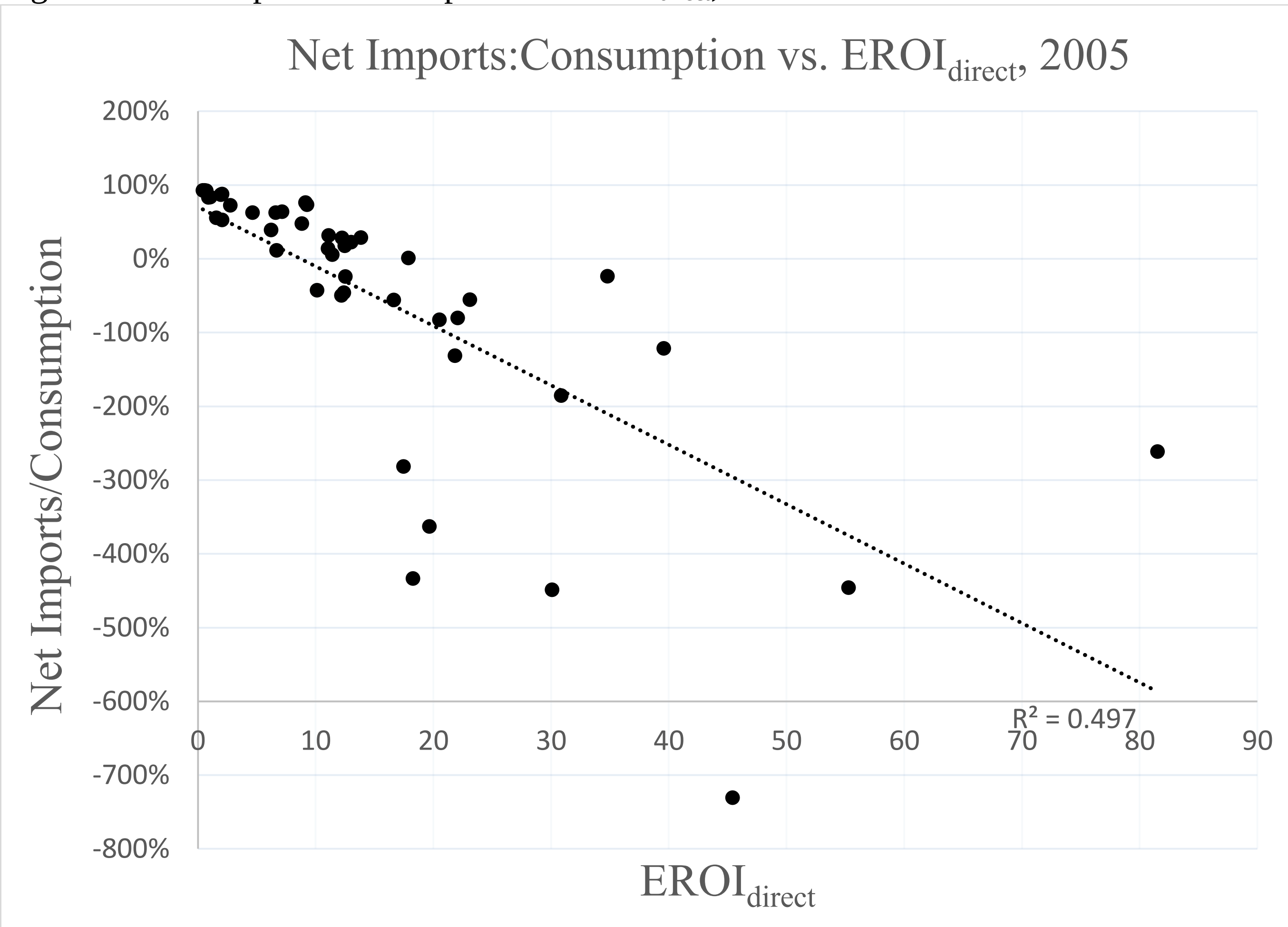


Figure 32. Net imports:consumption vs. $EROI_{direct}$, 1998.

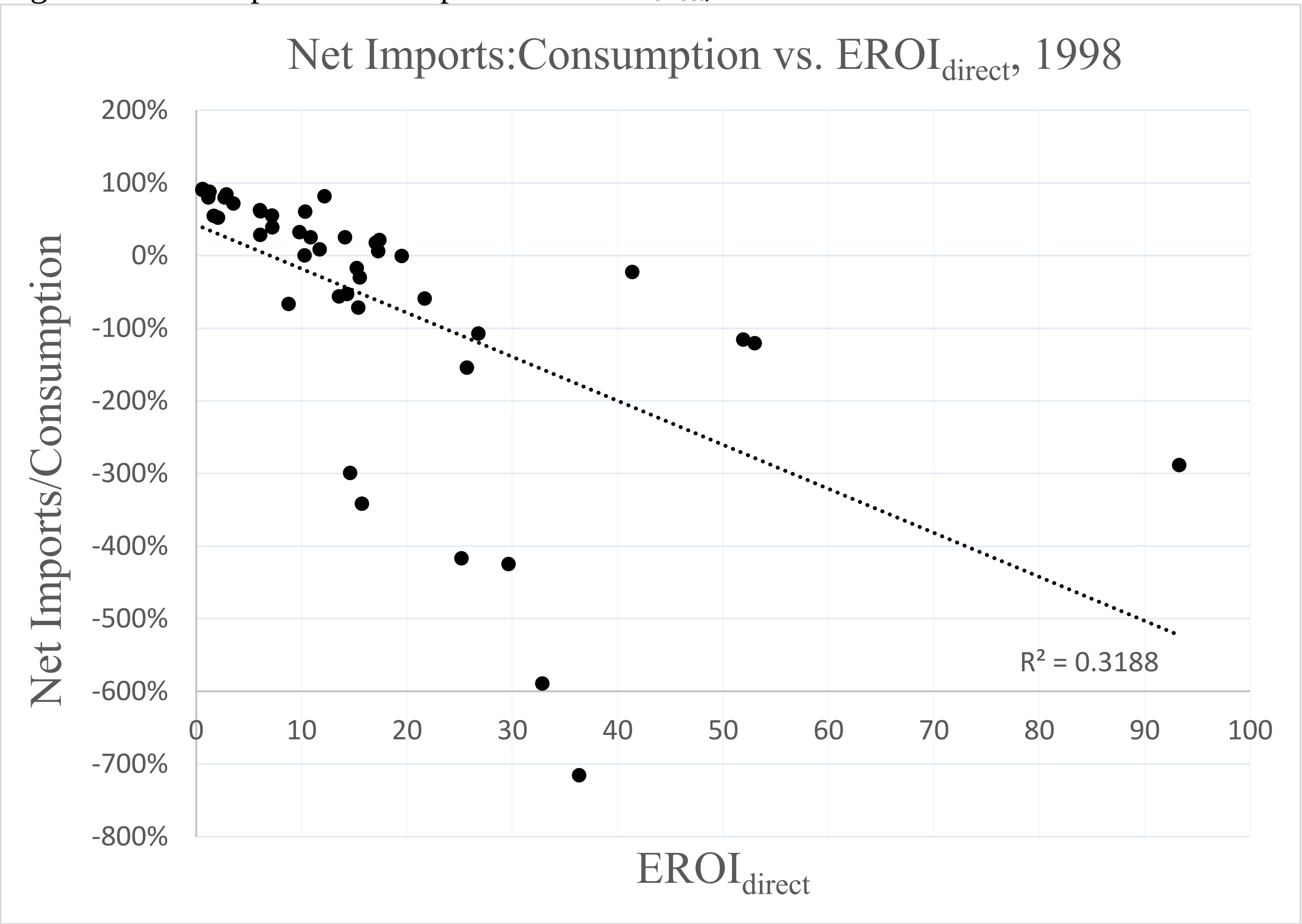
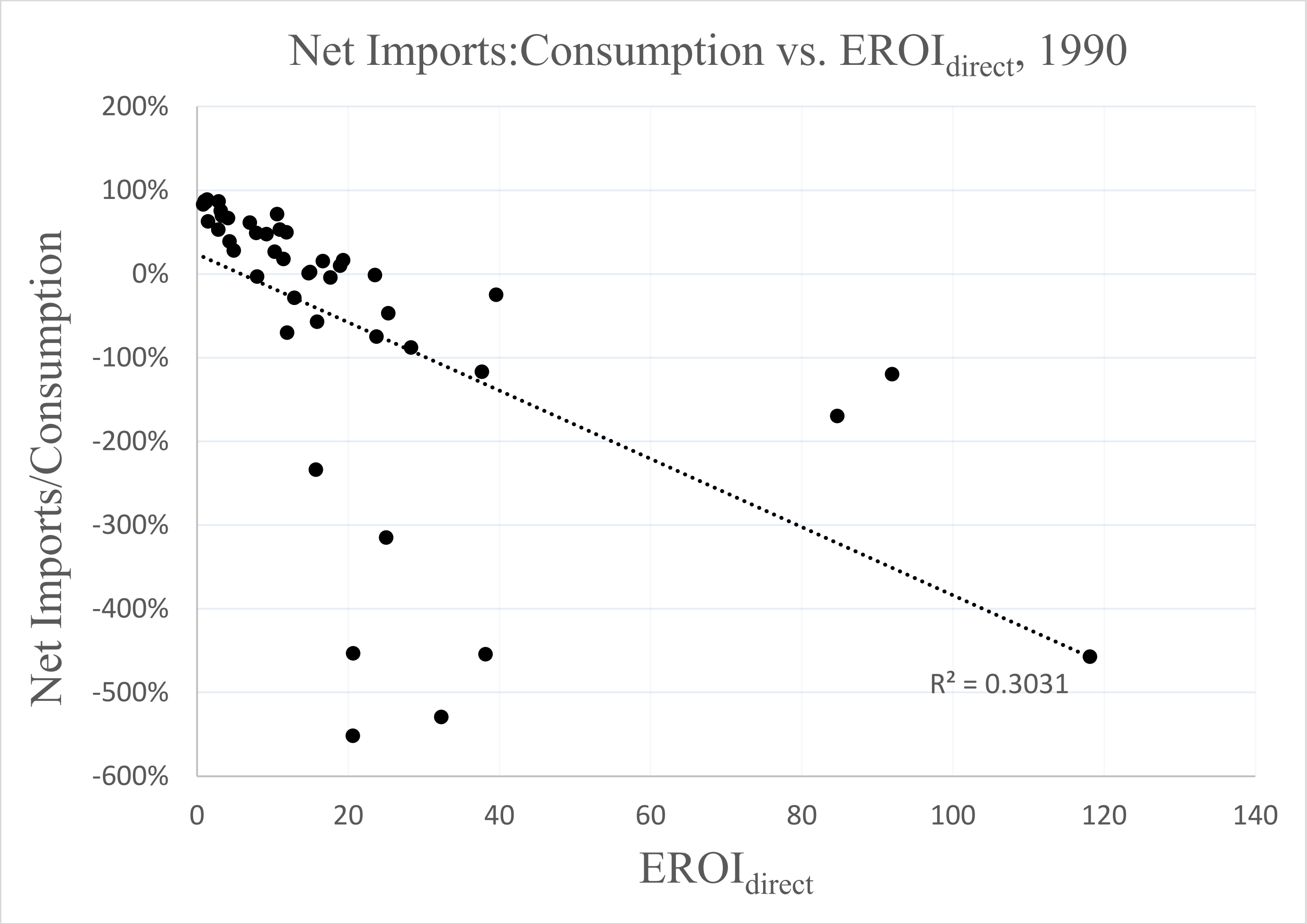


Figure 33. Net imports:consumption vs. $EROI_{direct}$, 1990.



Appendix 2

Table 6. Flat Tax 2005$ U.S. Billions, 5% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	49.5	6.4	2.0		2.1	9.8	3.9		4.7	5.1	0.6	0.7	0.6	0.3	0.9	1.0	2.1	1.4	1.9	15.0	0.0	0.4
1981	48.1	6.2	2.1		2.0	9.8	3.8		4.6	4.6	0.6	0.6	0.5	0.3	0.8	0.9	2.1	1.4	1.8	14.9	0.0	0.4
1982	45.7	5.9	2.3		1.9	9.3	3.7		4.4	4.4	0.5	0.6	0.5	0.3	0.7	1.0	2.2	1.3	1.8	15.6	0.0	0.4
1983	45.5	6.0	2.3		1.8	9.0	3.6		4.3	4.2	0.5	0.5	0.5	0.3	0.6	1.0	2.3	1.2	1.7	16.5	0.0	0.4
1984	47.9	5.8	2.2		1.9	9.7	3.6		4.5	4.1	0.6	0.6	0.4	0.3	0.6	1.1	2.4	1.2	1.9	17.9	0.0	0.5
1985	47.7	6.1	2.1		2.0	9.6	3.8		4.6	4.1	0.6	0.7	0.5	0.4	0.6	1.0	2.5	1.2	2.0	19.2	0.0	0.5
1986	47.8	6.2	2.1		2.0	9.1	3.8		4.4	3.8	0.6	0.7	0.5	0.4	0.7	1.1	2.4	1.2	2.2	20.4	0.0	0.5
1987	49.4	6.3	2.1		2.1	9.2	4.1		4.6	3.7	0.6	0.7	0.5	0.4	0.7	1.1	2.6	1.2	2.3	21.8	0.0	0.4
1988	51.7	6.2	2.1		2.1	9.9	4.1		5.0	3.5	0.5	0.6	0.5	0.4	0.6	1.2	2.6	1.2	2.3	23.2	0.0	0.5
1989	52.5	6.3	2.3		2.1	10.2	4.3		5.1	3.8	0.5	0.6	0.5	0.4	0.6	1.2	2.7	1.2	2.3	23.6	0.0	0.5
1990	52.2	6.2	2.3		2.2	10.8	4.3		4.9	3.8	0.6	0.6	0.6	0.4	0.6	1.1	2.8	1.3	2.5	23.5	0.0	0.4
1991	51.8	6.3	2.5		2.3	11.0	4.3	9.6	4.8	4.1	0.6	0.7	0.5	0.3	0.6	1.1	2.8	1.3	2.5	24.5	0.0	0.5
1992	52.8	6.0	2.5	20.9	2.2	11.1	4.3	9.3	5.0	4.0	0.6	0.6	0.5	0.4	0.6	1.1	2.8	1.3	2.5	25.4	0.0	0.6
1993	53.8	6.0	2.4	19.3	2.3	11.0	4.3	9.3	5.0	3.8	0.6	0.6	0.5	0.4	0.6	1.2	2.9	1.3	2.7	26.6	0.0	0.6
1994	54.5	5.9	2.5	17.5	2.3	11.6	4.2	9.1	5.1	3.7	0.6	0.7	0.6	0.4	0.7	1.2	2.9	1.4	2.8	28.5	0.0	0.6
1995	55.1	5.8	2.5	16.6	2.3	11.6	4.5	9.2	5.3	3.9	0.6	0.7	0.5	0.4	0.7	1.2	3.0	1.5	3.0	29.5	0.0	0.6
1996	57.0	6.1	2.5	15.6	2.4	11.8	4.4	9.2	5.4	4.0	0.7	0.8	0.5	0.4	0.7	1.3	3.1	1.5	3.2	31.1	0.0	0.6
1997	57.8	5.9	2.7	14.5	2.5	12.0	4.4	9.2	5.6	4.0	0.7	0.8	0.6	0.4	0.7	1.4	3.4	1.5	3.4	30.2	0.0	0.7
1998	58.2	5.8	2.8	14.3	2.5	11.5	4.6	9.0	5.7	4.2	0.7	0.6	0.5	0.4	0.7	1.4	3.5	1.6	3.4	30.2	0.0	0.7
1999	58.8	5.8	3.1	15.1	2.4	12.0	4.6	8.7	5.9	4.2	0.7	0.6	0.5	0.5	0.7	1.5	3.7	1.5	3.5	30.4	0.0	0.6
2000	60.7	5.8	3.3	15.5	2.6	12.4	4.6	8.9	5.9	4.2	0.7	0.6	0.5	0.4	0.6	1.4	3.7	1.5	3.6	32.8	0.0	0.6
2001	59.6	5.9	3.3	14.9	2.7	12.4	4.6	9.1	5.8	4.2	0.7	0.6	0.6	0.4	0.6	1.3	3.8	1.6	3.6	33.4	0.0	0.6
2002	60.1	5.8	3.5	15.5	2.6	12.4	4.7	8.9	5.9	4.2	0.7	0.6	0.6	0.4	0.6	1.3	3.9	1.5	3.6	35.5	0.0	0.6
2003	60.6	5.9	3.6	16.1	2.7	12.9	4.9	8.8	6.2	4.2	0.8	0.6	0.7	0.5	0.6	1.4	3.9	1.6	3.6	41.0	0.0	0.6
2004	61.9	6.0	3.8	16.6	2.7	13.0	4.9	8.8	6.3	4.3	0.8	0.6	0.6	0.5	0.6	1.5	4.0	1.6	3.7	47.6	0.0	0.6
2005	62.2	6.0	4.0	16.4	2.6	12.9	4.9	8.6	6.3	4.3	0.8	0.5	0.5	0.4	0.6	1.6	4.2	1.6	3.8	53.0	0.0	0.6
2006	61.4	6.1	3.9	16.9	2.6	12.8	4.8	8.7	6.2	4.3	0.8	0.6	0.6	0.4	0.6	1.6	4.3	1.5	4.0	57.8	0.0	0.6
2007	62.4	5.9	4.0	16.3	2.4	13.0	4.8	8.4	6.1	4.4	0.7	0.6	0.6	0.4	0.6	1.7	4.4	1.5	4.2	61.2	0.0	0.6
2008	60.5	5.8	3.7	16.9	2.4	12.6	4.7	8.4	5.9	4.4	0.7	0.5	0.6	0.4	0.6	1.8	4.5	1.6	4.4	63.9	0.0	0.7
2009	56.3	5.3	3.4	15.3	2.3	11.4	4.2	7.9	5.6	4.0	0.7	0.5	0.5	0.5	0.5	1.8	4.5	1.4	4.2	70.6	0.0	0.7
2010	58.3	5.5	3.2	17.2	2.4	12.2	4.3	8.3	5.6	4.0	0.7	0.5	0.6	0.5	0.6	1.8	4.4	1.4	4.7	77.1	0.0	0.7

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World 44	World
1980		0.5	0.9	3.0	0.9	1.2	0.5	1.4	0.3	0.3	0.3	2.5	0.2	0.7	4.4	0.2	0.1	1.8	2.4	0.5	0.7	1.0	132.2	191.0
1981		0.5	0.9	3.5	1.0	1.1	0.4	1.4	0.2	0.3	0.3	2.8	0.2	0.6	4.0	0.2	0.1	1.8	2.6	0.4	0.7	1.1	129.8	188.5
1982		0.5	0.9	3.6	1.0	1.4	0.4	1.4	0.2	0.3	0.3	2.9	0.2	0.6	4.0	0.3	0.1	1.7	2.8	0.4	0.8	1.1	127.3	187.5
1983		0.6	0.8	3.8	1.0	1.6	0.4	1.5	0.3	0.3	0.4	2.7	0.2	0.6	4.1	0.3	0.1	1.7	2.9	0.4	0.8	1.0	127.7	189.0
1984		0.6	0.9	4.4	1.0	1.6	0.4	1.7	0.3	0.3	0.4	2.9	0.2	0.6	4.2	0.3	0.2	1.9	3.1	0.4	0.8	1.0	134.3	198.0
1985		0.6	0.9	4.6	1.1	1.7	0.5	1.8	0.3	0.3	0.5	2.9	0.2	0.6	4.4	0.3	0.1	1.9	3.1	0.4	1.0	1.0	137.2	202.5
1986		0.7	0.8	4.9	1.1	1.7	0.6	1.9	0.3	0.3	0.5	2.8	0.3	0.6	4.4	0.3	0.1	2.0	3.2	0.5	1.1	1.1	139.0	206.6
1987		0.7	0.8	5.0	1.2	1.8	0.6	1.9	0.4	0.3	0.5	2.9	0.3	0.6	4.6	0.3	0.2	2.0	3.3	0.4	1.1	1.1	143.6	212.4
1988		0.8	0.7	5.4	1.3	1.9	0.6	2.2	0.4	0.4	0.5	2.9	0.3	0.7	4.5	0.4	0.2	2.1	3.3	0.4	1.1	1.1	149.1	219.4
1989		0.8	0.7	5.7	1.5	2.0	0.7	2.3	0.4	0.4	0.5	3.0	0.3	0.8	4.3	0.4	0.2	2.1	3.1	0.4	1.2	1.1	152.9	222.5
1990		0.8	0.7	6.0	1.6	2.1	0.7	2.5	0.3	0.4	0.7	3.1	0.3	0.9	3.5	0.5	0.2	2.2	3.1	0.5	1.3	1.1	153.4	223.9
1991		0.8	0.7	6.4	1.8	2.3	0.5	2.8	0.4	0.4	0.7	3.2	0.3	0.9	3.4	0.5	0.2	2.3	3.2	0.5	1.4	1.2	166.3	222.9
1992		0.8	0.6	6.8	1.9	2.4	0.6	3.0	0.2	0.4	0.8	3.2	0.3	1.0	3.4	0.5	0.3	2.4	3.3	0.5	1.4	1.2	189.5	221.7
1993	1.2	0.9	0.6	7.2	2.1	2.5	0.7	3.4	0.3	0.4	0.8	3.3	0.3	1.0	3.5	0.5	0.3	2.4	3.3	0.5	1.5	1.2	192.9	223.3
1994	1.1	0.9	0.6	7.7	2.2	2.6	0.8	3.6	0.4	0.4	0.9	3.5	0.3	1.0	3.3	0.5	0.3	2.5	3.6	0.4	1.4	1.2	196.1	225.2
1995	1.2	0.9	0.6	9.1	2.2	2.7	0.8	4.0	0.4	0.4	0.9	3.3	0.3	1.0	3.2	0.5	0.3	2.4	3.6	0.5	1.6	1.3	199.7	229.6
1996	1.2	0.9	0.6	8.4	2.5	2.7	0.8	4.1	0.5	0.4	1.1	3.4	0.3	1.1	3.6	0.5	0.3	2.6	3.6	0.5	1.8	1.4	204.6	235.0
1997	1.0	0.9	0.6	8.9	2.6	3.0	0.7	4.4	0.5	0.5	1.1	3.6	0.3	1.0	3.5	0.5	0.3	2.6	4.0	0.5	1.9	1.4	206.1	236.6
1998	1.0	1.0	0.6	9.3	2.5	3.1	0.7	3.9	0.6	0.4	1.1	3.8	0.3	0.9	3.3	0.6	0.3	2.7	3.8	0.5	1.9	1.5	206.2	236.8
1999	0.9	1.0	0.6	9.9	2.7	3.3	0.8	4.4	0.6	0.4	1.1	3.8	0.4	0.9	3.4	0.7	0.3	2.7	3.9	0.5	1.9	1.3	209.9	241.1
2000	1.0	1.0	0.6	10.3	2.8	3.3	0.8	4.5	0.6	0.4	1.2	4.0	0.4	0.8	3.0	0.7	0.4	3.0	4.0	0.5	2.1	1.4	217.1	249.1
2001	1.0	1.1	0.6	10.5	2.8	3.5	0.8	4.7	0.6	0.5	1.3	3.9	0.4	0.9	2.9	0.6	0.3	3.1	4.1	0.5	1.9	1.5	217.3	250.0
2002	1.0	1.1	0.6	10.4	3.0	3.8	0.8	4.8	0.6	0.5	1.4	3.9	0.4	0.9	2.9	0.7	0.3	3.2	3.9	0.5	2.0	1.5	221.0	254.6
2003	1.0	1.1	0.6	10.6	3.0	4.0	0.7	5.0	0.7	0.5	1.5	4.0	0.4	1.0	3.0	0.6	0.3	3.6	4.3	0.5	2.1	1.4	231.0	266.1
2004	0.9	1.1	0.6	11.6	3.2	4.2	0.8	5.0	0.7	0.5	1.5	3.9	0.4	1.0	3.0	0.7	0.4	4.0	4.6	0.5	2.2	1.5	242.9	279.4
2005	1.1	1.1	0.6	12.2	3.4	4.7	1.0	5.1	0.8	0.6	1.5	4.1	0.4	1.1	3.0	0.7	0.6	4.2	4.5	0.5	2.4	1.5	250.9	288.8
2006	1.1	1.1	0.6	13.3	3.6	4.9	0.9	5.0	0.8	0.5	1.6	4.3	0.4	1.1	3.1	0.6	0.6	4.2	4.6	0.5	2.6	1.6	257.5	296.5
2007	1.1	1.1	0.6	14.2	3.9	5.1	1.0	5.2	0.8	0.6	1.7	4.6	0.4	1.0	3.1	0.6	0.6	4.1	4.7	0.5	2.9	1.6	263.6	303.2
2008	1.0	1.1	0.6	15.0	3.8	5.3	1.1	5.4	0.8	0.6	1.8	4.7	0.4	1.0	3.1	0.6	0.7	4.4	5.1	0.5	2.8	1.7	266.2	307.1
2009	1.0	1.0	0.5	17.0	4.2	5.8	1.2	5.4	0.9	0.6	1.8	4.4	0.4	0.8	3.0	0.6	0.7	4.5	4.9	0.5	2.8	1.6	265.3	305.0
2010	1.0	1.0	0.5	17.8	4.3	5.8	1.2	6.0	0.9	0.6	2.0	4.5	0.4	0.8	3.2	0.6	0.7	4.9	4.9	0.4	2.8	1.7	280.0	321.8

Table 7. Flat Tax $fGDP_{e+CO2}$, 5% SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	11%	7%	6%		9%	7%	6%		11%	7%	8%	6%	8%	6%	10%	14%	7%	9%	9%	49%	15%	11%
1981	10%	7%	6%		9%	7%	5%		11%	7%	7%	5%	8%	5%	8%	13%	7%	8%	8%	42%	12%	10%
1982	10%	6%	5%		9%	6%	5%		10%	6%	6%	5%	6%	5%	7%	13%	7%	7%	7%	36%	10%	9%
1983	8%	5%	4%		8%	5%	4%		9%	5%	5%	3%	5%	4%	5%	12%	6%	7%	7%	31%	9%	7%
1984	8%	5%	4%		7%	5%	4%		9%	5%	5%	3%	5%	4%	5%	11%	5%	6%	7%	26%	8%	7%
1985	7%	5%	4%		6%	4%	4%		8%	4%	4%	3%	5%	4%	5%	11%	5%	6%	6%	24%	7%	7%
1986	5%	4%	3%		5%	4%	3%		6%	4%	4%	3%	4%	4%	5%	8%	3%	5%	5%	20%	4%	6%
1987	5%	4%	3%		5%	4%	3%		7%	4%	4%	3%	4%	4%	5%	9%	4%	5%	5%	20%	4%	5%
1988	5%	4%	3%		4%	4%	3%		6%	4%	4%	2%	4%	4%	5%	8%	3%	5%	6%	18%	4%	6%
1989	5%	4%	3%		4%	4%	3%		7%	4%	4%	2%	4%	4%	5%	9%	4%	5%	6%	17%	5%	6%
1990	5%	4%	4%		5%	4%	3%		7%	4%	4%	3%	4%	4%	6%	10%	4%	5%	8%	21%	6%	6%
1991	5%	4%	4%		4%	4%	3%	7%	7%	4%	4%	3%	4%	4%	6%	8%	4%	5%	6%	17%	5%	5%
1992	4%	4%	3%	16%	5%	4%	3%	6%	7%	4%	4%	2%	5%	5%	6%	8%	3%	5%	6%	22%	5%	5%
1993	4%	3%	3%	12%	4%	4%	3%	6%	6%	4%	4%	2%	5%	5%	4%	7%	3%	4%	5%	19%	5%	5%
1994	4%	3%	3%	13%	4%	4%	3%	5%	6%	4%	3%	2%	5%	4%	4%	7%	3%	4%	6%	11%	4%	5%
1995	4%	3%	3%	16%	5%	4%	3%	6%	5%	4%	4%	2%	5%	5%	4%	8%	3%	4%	5%	11%	4%	5%
1996	4%	3%	3%	12%	4%	4%	3%	4%	6%	4%	4%	3%	5%	5%	5%	8%	3%	5%	6%	11%	4%	5%
1997	4%	3%	3%	10%	4%	4%	3%	4%	5%	3%	4%	2%	4%	4%	4%	8%	3%	4%	5%	10%	4%	5%
1998	3%	2%	2%	9%	3%	3%	2%	3%	4%	3%	3%	2%	4%	4%	4%	6%	2%	4%	5%	9%	3%	4%
1999	3%	2%	2%	10%	3%	4%	2%	3%	5%	3%	3%	2%	4%	4%	4%	7%	3%	4%	5%	9%	3%	4%
2000	4%	2%	3%	10%	4%	4%	3%	3%	5%	3%	3%	2%	3%	2%	4%	9%	3%	4%	6%	10%	5%	5%
2001	4%	2%	3%	9%	4%	4%	2%	3%	5%	3%	3%	2%	3%	3%	4%	8%	3%	4%	5%	9%	4%	5%
2002	4%	2%	3%	8%	4%	3%	2%	3%	5%	3%	3%	2%	3%	3%	4%	8%	3%	4%	5%	9%	4%	4%
2003	4%	2%	3%	9%	4%	3%	3%	4%	6%	3%	4%	3%	4%	4%	5%	10%	3%	5%	6%	10%	4%	5%
2004	5%	3%	4%	11%	5%	4%	4%	4%	6%	4%	5%	3%	4%	4%	5%	12%	3%	6%	7%	12%	5%	6%
2005	5%	3%	5%	14%	6%	4%	4%	5%	7%	4%	5%	3%	5%	4%	5%	14%	4%	6%	8%	14%	6%	7%
2006	6%	4%	5%	15%	7%	4%	5%	5%	8%	4%	5%	4%	5%	5%	5%	14%	4%	7%	9%	14%	6%	7%
2007	6%	4%	5%	15%	6%	4%	5%	5%	8%	5%	6%	4%	5%	4%	5%	14%	4%	8%	9%	15%	6%	7%
2008	7%	5%	7%	18%	8%	5%	6%	7%	10%	6%	7%	5%	6%	5%	6%	17%	5%	10%	11%	19%	8%	9%
2009	5%	3%	5%	15%	6%	5%	5%	6%	6%	5%	5%	4%	5%	5%	5%	11%	3%	7%	8%	14%	5%	7%
2010	5%	4%	6%	17%	6%	5%	5%	6%	7%	5%	6%	4%	6%	6%	6%	12%	4%	8%	9%	15%	6%	7%

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World-44
1980		7%	12%	13%	14%	23%	3%	12%	15%	6%	15%	7%	7%	9%	16%	5%	3%	10%	8%	5%	7%	18%	11%
1981		5%	11%	12%	13%	20%	5%	11%	15%	8%	15%	7%	6%	10%	16%	5%	3%	9%	7%	4%	7%	14%	10%
1982		5%	10%	12%	11%	17%	6%	9%	17%	7%	13%	6%	5%	9%	17%	5%	4%	10%	7%	4%	6%	12%	9%
1983		4%	8%	11%	9%	14%	4%	8%	14%	8%	12%	5%	5%	9%	15%	5%	4%	10%	6%	4%	5%	11%	8%
1984		4%	8%	10%	9%	16%	4%	7%	12%	8%	11%	5%	5%	8%	13%	5%	4%	9%	6%	4%	5%	10%	7%
1985		4%	8%	10%	8%	15%	5%	7%	14%	8%	11%	5%	4%	7%	13%	4%	5%	9%	5%	3%	4%	10%	7%
1986		2%	6%	8%	6%	11%	3%	5%	7%	4%	8%	3%	3%	5%	13%	3%	4%	5%	4%	3%	3%	6%	6%
1987		3%	7%	8%	6%	12%	4%	6%	11%	7%	8%	4%	4%	5%	15%	3%	4%	6%	5%	4%	4%	8%	6%
1988		3%	6%	8%	6%	12%	4%	5%	10%	4%	7%	3%	4%	4%	13%	3%	4%	5%	5%	3%	3%	6%	5%
1989		3%	6%	8%	6%	14%	5%	6%	12%	5%	7%	4%	4%	5%	11%	3%	4%	5%	4%	3%	4%	7%	5%
1990		4%	6%	10%	8%	14%	8%	6%	6%	6%	9%	4%	5%	6%	10%	3%	5%	6%	5%	4%	4%	8%	6%
1991		3%	6%	10%	6%	13%	12%	6%	4%	5%	8%	4%	5%	5%	12%	3%	5%	6%	5%	3%	4%	6%	5%
1992		3%	6%	9%	6%	12%	15%	6%	3%	4%	7%	4%	4%	5%	11%	3%	4%	5%	5%	3%	4%	7%	5%
1993	6%	3%	6%	7%	6%	10%	23%	6%	3%	4%	6%	3%	4%	4%	11%	3%	3%	4%	4%	3%	4%	5%	5%
1994	5%	3%	5%	7%	5%	11%	23%	5%	4%	5%	6%	3%	4%	4%	10%	3%	5%	5%	4%	3%	3%	6%	4%
1995	6%	3%	6%	8%	5%	11%	25%	6%	5%	6%	6%	3%	5%	4%	10%	3%	5%	5%	5%	4%	4%	7%	5%
1996	6%	3%	6%	8%	6%	12%	28%	6%	6%	7%	7%	3%	5%	4%	10%	3%	6%	6%	4%	4%	4%	7%	5%
1997	5%	3%	5%	8%	6%	11%	23%	6%	5%	6%	6%	3%	5%	4%	8%	3%	3%	5%	4%	3%	4%	5%	4%
1998	5%	2%	5%	7%	4%	8%	10%	5%	3%	5%	5%	2%	4%	3%	6%	2%	3%	3%	4%	3%	3%	4%	4%
1999	5%	3%	5%	7%	6%	10%	8%	6%	6%	7%	6%	3%	4%	4%	6%	2%	3%	5%	4%	3%	3%	6%	4%
2000	5%	4%	5%	8%	8%	13%	14%	7%	8%	9%	7%	4%	4%	5%	6%	3%	3%	7%	4%	3%	4%	7%	4%
2001	5%	3%	5%	7%	8%	11%	14%	6%	7%	9%	7%	4%	3%	5%	6%	3%	3%	6%	4%	3%	3%	6%	4%
2002	5%	3%	5%	7%	8%	11%	15%	6%	8%	9%	7%	3%	4%	5%	6%	3%	3%	7%	4%	3%	4%	7%	4%
2003	8%	3%	6%	7%	9%	12%	27%	7%	8%	9%	7%	4%	4%	6%	6%	3%	3%	7%	5%	3%	4%	9%	4%
2004	9%	4%	7%	9%	10%	16%	25%	6%	10%	11%	9%	5%	5%	6%	7%	4%	4%	9%	5%	3%	4%	9%	5%
2005	10%	5%	9%	10%	13%	25%	34%	7%	14%	14%	11%	7%	6%	7%	8%	4%	6%	12%	6%	4%	5%	9%	6%
2006	10%	5%	10%	11%	13%	29%	30%	8%	17%	15%	12%	7%	6%	6%	8%	5%	6%	14%	7%	4%	6%	13%	7%
2007	10%	6%	10%	11%	13%	30%	34%	8%	18%	15%	13%	7%	6%	6%	8%	5%	6%	15%	8%	3%	7%	14%	7%
2008	13%	7%	13%	13%	16%	36%	48%	10%	23%	20%	16%	10%	7%	7%	10%	7%	7%	21%	10%	4%	9%	20%	9%
2009	11%	5%	11%	10%	11%	26%	38%	7%	17%	14%	12%	6%	6%	4%	8%	5%	5%	15%	8%	3%	7%	14%	7%
2010	11%	6%	12%	12%	13%	31%	56%	9%	22%	18%	14%	7%	7%	5%	8%	6%	8%	19%	8%	4%	7%	20%	7%

Table 8. Flat Tax 2005$ U.S. Billions, 3% SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	$ 166.4	$ 21.4	$ 6.8		$ 7.0	$ 33.0	$ 13.0		$ 15.9	$ 17.0	$ 1.9	$ 2.3	$ 1.9	$ 1.2	$ 2.9	$ 3.2	$ 6.9	$ 4.6	$ 6.5	$ 50.5	$ -	$ 1.4
1981	$ 161.9	$ 20.9	$ 7.2		$ 6.7	$ 32.9	$ 12.7		$ 15.4	$ 15.5	$ 1.9	$ 2.1	$ 1.8	$ 1.1	$ 2.5	$ 3.1	$ 7.1	$ 4.7	$ 6.1	$ 50.2	$ -	$ 1.4
1982	$ 153.7	$ 19.9	$ 7.7		$ 6.3	$ 31.4	$ 12.4		$ 14.8	$ 14.8	$ 1.8	$ 1.9	$ 1.6	$ 1.0	$ 2.2	$ 3.4	$ 7.2	$ 4.4	$ 6.0	$ 52.5	$ -	$ 1.5
1983	$ 152.9	$ 20.1	$ 7.9		$ 6.1	$ 30.2	$ 12.1		$ 14.3	$ 14.2	$ 1.8	$ 1.8	$ 1.5	$ 1.0	$ 2.1	$ 3.4	$ 7.6	$ 3.9	$ 5.7	$ 55.5	$ -	$ 1.5
1984	$ 161.0	$ 19.7	$ 7.3		$ 6.4	$ 32.6	$ 12.2		$ 15.1	$ 13.8	$ 1.9	$ 1.9	$ 1.5	$ 1.1	$ 2.0	$ 3.6	$ 8.2	$ 4.0	$ 6.3	$ 60.1	$ -	$ 1.6
1985	$ 160.5	$ 20.5	$ 7.1		$ 6.7	$ 32.3	$ 12.7		$ 15.5	$ 13.8	$ 1.9	$ 2.2	$ 1.6	$ 1.2	$ 2.2	$ 3.4	$ 8.3	$ 4.1	$ 6.7	$ 64.8	$ -	$ 1.6
1986	$ 160.8	$ 20.7	$ 6.9		$ 6.8	$ 30.6	$ 12.9		$ 14.9	$ 12.6	$ 1.9	$ 2.3	$ 1.8	$ 1.3	$ 2.3	$ 3.6	$ 8.2	$ 4.1	$ 7.4	$ 68.7	$ -	$ 1.6
1987	$ 166.3	$ 21.1	$ 7.0		$ 7.0	$ 31.0	$ 13.7		$ 15.5	$ 12.4	$ 1.9	$ 2.2	$ 1.8	$ 1.2	$ 2.2	$ 3.8	$ 8.7	$ 4.1	$ 7.6	$ 73.3	$ -	$ 1.5
1988	$ 173.9	$ 20.9	$ 7.0		$ 7.1	$ 33.4	$ 13.8		$ 16.7	$ 11.9	$ 1.8	$ 2.1	$ 1.7	$ 1.2	$ 2.1	$ 3.9	$ 8.6	$ 4.0	$ 7.7	$ 78.1	$ -	$ 1.6
1989	$ 176.8	$ 21.3	$ 7.7		$ 7.1	$ 34.5	$ 14.4		$ 17.2	$ 12.7	$ 1.8	$ 2.1	$ 1.8	$ 1.3	$ 2.0	$ 3.9	$ 9.1	$ 4.2	$ 7.9	$ 79.3	$ -	$ 1.7
1990	$ 175.7	$ 21.0	$ 7.8		$ 7.4	$ 36.5	$ 14.5		$ 16.4	$ 12.8	$ 1.9	$ 2.0	$ 1.9	$ 1.2	$ 2.0	$ 3.6	$ 9.3	$ 4.3	$ 8.3	$ 79.1	$ -	$ 1.4
1991	$ 174.2	$ 21.3	$ 8.3		$ 7.6	$ 37.2	$ 14.5	$ 32.4	$ 16.2	$ 13.7	$ 2.1	$ 2.2	$ 1.8	$ 1.1	$ 2.0	$ 3.8	$ 9.4	$ 4.4	$ 8.6	$ 82.6	$ -	$ 1.7
1992	$ 177.5	$ 20.1	$ 8.4	$ 70.4	$ 7.4	$ 37.4	$ 14.5	$ 31.2	$ 16.9	$ 13.3	$ 2.0	$ 2.1	$ 1.7	$ 1.2	$ 2.1	$ 3.8	$ 9.6	$ 4.3	$ 8.3	$ 85.3	$ -	$ 1.9
1993	$ 180.8	$ 20.3	$ 8.0	$ 64.9	$ 7.7	$ 37.1	$ 14.4	$ 31.1	$ 16.9	$ 12.8	$ 2.0	$ 2.1	$ 1.8	$ 1.2	$ 2.1	$ 4.2	$ 9.9	$ 4.3	$ 9.0	$ 89.4	$ -	$ 1.9
1994	$ 183.4	$ 19.9	$ 8.3	$ 58.9	$ 7.7	$ 39.0	$ 14.1	$ 30.5	$ 17.3	$ 12.6	$ 2.0	$ 2.3	$ 2.0	$ 1.3	$ 2.3	$ 4.1	$ 9.8	$ 4.7	$ 9.4	$ 96.0	$ -	$ 1.9
1995	$ 185.4	$ 19.5	$ 8.5	$ 55.9	$ 7.8	$ 38.9	$ 15.0	$ 31.0	$ 17.7	$ 13.0	$ 2.1	$ 2.4	$ 1.7	$ 1.3	$ 2.2	$ 4.2	$ 10.1	$ 5.0	$ 10.1	$ 99.4	$ -	$ 1.9
1996	$ 191.8	$ 20.5	$ 8.3	$ 52.5	$ 7.9	$ 39.6	$ 14.8	$ 31.0	$ 18.1	$ 13.6	$ 2.3	$ 2.5	$ 1.8	$ 1.4	$ 2.3	$ 4.5	$ 10.5	$ 5.0	$ 10.7	$ 104.8	$ -	$ 2.0
1997	$ 194.4	$ 19.8	$ 9.2	$ 48.6	$ 8.3	$ 40.3	$ 14.8	$ 30.9	$ 19.0	$ 13.4	$ 2.2	$ 2.6	$ 1.9	$ 1.5	$ 2.3	$ 4.5	$ 11.5	$ 5.1	$ 11.3	$ 101.7	$ -	$ 2.2
1998	$ 195.8	$ 19.6	$ 9.6	$ 48.2	$ 8.3	$ 38.8	$ 15.4	$ 30.3	$ 19.1	$ 14.3	$ 2.3	$ 2.1	$ 1.7	$ 1.5	$ 2.3	$ 4.7	$ 11.8	$ 5.4	$ 11.3	$ 101.6	$ -	$ 2.2
1999	$ 197.9	$ 19.4	$ 10.4	$ 50.8	$ 8.2	$ 40.3	$ 15.4	$ 29.2	$ 19.7	$ 14.1	$ 2.3	$ 2.0	$ 1.7	$ 1.5	$ 2.3	$ 4.9	$ 12.4	$ 5.1	$ 11.7	$ 102.2	$ -	$ 2.0
2000	$ 204.4	$ 19.5	$ 11.0	$ 52.2	$ 8.6	$ 41.9	$ 15.6	$ 29.8	$ 20.0	$ 14.0	$ 2.2	$ 1.9	$ 1.7	$ 1.4	$ 2.1	$ 4.8	$ 12.4	$ 5.2	$ 12.0	$ 110.3	$ -	$ 2.0
2001	$ 200.5	$ 20.0	$ 11.2	$ 50.3	$ 9.1	$ 41.6	$ 15.5	$ 30.6	$ 19.6	$ 14.1	$ 2.4	$ 2.0	$ 1.9	$ 1.4	$ 2.1	$ 4.5	$ 12.9	$ 5.3	$ 12.1	$ 112.4	$ -	$ 2.0
2002	$ 202.1	$ 19.6	$ 11.8	$ 52.3	$ 8.9	$ 41.8	$ 15.7	$ 29.8	$ 19.8	$ 14.0	$ 2.5	$ 1.9	$ 1.9	$ 1.5	$ 2.0	$ 4.2	$ 13.1	$ 5.0	$ 12.1	$ 119.3	$ -	$ 1.9
2003	$ 204.0	$ 20.0	$ 12.1	$ 54.1	$ 9.0	$ 43.6	$ 16.5	$ 29.6	$ 20.8	$ 14.2	$ 2.6	$ 2.2	$ 2.3	$ 1.6	$ 2.1	$ 4.7	$ 13.1	$ 5.3	$ 12.1	$ 138.0	$ -	$ 2.0
2004	$ 208.2	$ 20.3	$ 12.8	$ 55.7	$ 9.2	$ 43.8	$ 16.3	$ 29.6	$ 21.3	$ 14.3	$ 2.6	$ 2.0	$ 2.1	$ 1.7	$ 2.1	$ 4.9	$ 13.6	$ 5.5	$ 12.4	$ 160.2	$ -	$ 1.9
2005	$ 209.1	$ 20.3	$ 13.3	$ 55.3	$ 8.7	$ 43.3	$ 16.4	$ 29.1	$ 21.2	$ 14.4	$ 2.7	$ 1.8	$ 1.8	$ 1.5	$ 2.0	$ 5.3	$ 14.3	$ 5.4	$ 12.9	$ 178.3	$ -	$ 2.1
2006	$ 206.4	$ 20.4	$ 13.1	$ 57.0	$ 8.7	$ 43.2	$ 16.3	$ 29.2	$ 20.8	$ 14.3	$ 2.6	$ 2.1	$ 2.1	$ 1.4	$ 2.0	$ 5.5	$ 14.5	$ 5.1	$ 13.4	$ 194.3	$ -	$ 2.1
2007	$ 209.9	$ 19.9	$ 13.5	$ 55.0	$ 8.1	$ 43.7	$ 16.0	$ 28.3	$ 20.5	$ 14.8	$ 2.5	$ 1.9	$ 2.1	$ 1.5	$ 2.0	$ 5.9	$ 14.8	$ 5.0	$ 14.0	$ 205.9	$ -	$ 2.1
2008	$ 203.5	$ 19.7	$ 12.4	$ 56.8	$ 8.0	$ 42.4	$ 15.7	$ 28.3	$ 20.0	$ 14.7	$ 2.4	$ 1.8	$ 1.9	$ 1.4	$ 1.9	$ 5.9	$ 15.0	$ 5.4	$ 14.9	$ 214.9	$ -	$ 2.2
2009	$ 189.2	$ 18.0	$ 11.4	$ 51.5	$ 7.8	$ 38.5	$ 14.2	$ 26.4	$ 19.0	$ 13.5	$ 2.3	$ 1.7	$ 1.8	$ 1.6	$ 1.8	$ 5.9	$ 15.2	$ 4.7	$ 14.2	$ 237.5	$ -	$ 2.2
2010	$ 196.2	$ 18.4	$ 10.9	$ 57.9	$ 8.1	$ 41.1	$ 14.5	$ 27.9	$ 18.9	$ 13.4	$ 2.4	$ 1.7	$ 2.0	$ 1.6	$ 2.0	$ 6.1	$ 14.7	$ 4.8	$ 15.6	$ 259.5	$ -	$ 2.3

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44	World
1980		$ 1.8	$ 2.9	$ 10.1	$ 3.0	$ 4.1	$ 1.8	$ 4.6	$ 1.1	$ 1.1	$ 0.9	$ 8.4	$ 0.7	$ 2.4	$ 14.9	$ 0.8	$ 0.5	$ 6.2	$ 8.2	$ 1.6	$ 2.4	$ 3.3	$ 444.8	$ 642.4
1981		$ 1.8	$ 2.9	$ 11.8	$ 3.2	$ 3.8	$ 1.3	$ 4.8	$ 0.8	$ 0.9	$ 1.0	$ 9.3	$ 0.7	$ 2.0	$ 13.5	$ 0.7	$ 0.5	$ 6.1	$ 8.9	$ 1.4	$ 2.2	$ 3.5	$ 436.5	$ 634.3
1982		$ 1.8	$ 2.9	$ 12.2	$ 3.2	$ 4.7	$ 1.3	$ 4.8	$ 0.8	$ 1.0	$ 1.0	$ 9.8	$ 0.7	$ 2.0	$ 13.6	$ 1.0	$ 0.5	$ 5.8	$ 9.5	$ 1.3	$ 2.6	$ 3.5	$ 428.3	$ 630.6
1983		$ 1.9	$ 2.8	$ 12.8	$ 3.3	$ 5.4	$ 1.5	$ 5.2	$ 0.9	$ 1.0	$ 1.2	$ 9.1	$ 0.7	$ 1.9	$ 13.6	$ 1.0	$ 0.4	$ 5.8	$ 9.6	$ 1.4	$ 2.7	$ 3.3	$ 429.5	$ 635.8
1984		$ 1.9	$ 2.9	$ 14.7	$ 3.4	$ 5.3	$ 1.5	$ 5.7	$ 0.9	$ 0.9	$ 1.5	$ 9.7	$ 0.8	$ 2.0	$ 14.2	$ 0.9	$ 0.5	$ 6.4	$ 10.3	$ 1.4	$ 2.9	$ 3.4	$ 451.6	$ 665.9
1985		$ 2.1	$ 2.9	$ 15.6	$ 3.5	$ 5.6	$ 1.7	$ 6.0	$ 0.9	$ 1.0	$ 1.6	$ 9.8	$ 0.8	$ 2.1	$ 14.7	$ 1.0	$ 0.5	$ 6.2	$ 10.5	$ 1.4	$ 3.2	$ 3.4	$ 461.6	$ 681.2
1986		$ 2.2	$ 2.7	$ 16.5	$ 3.8	$ 5.8	$ 2.0	$ 6.3	$ 1.0	$ 1.0	$ 1.7	$ 9.3	$ 0.9	$ 2.1	$ 14.9	$ 1.1	$ 0.5	$ 6.6	$ 10.8	$ 1.5	$ 3.7	$ 3.6	$ 467.5	$ 695.1
1987		$ 2.4	$ 2.7	$ 17.0	$ 4.1	$ 6.1	$ 1.9	$ 6.5	$ 1.2	$ 1.1	$ 1.6	$ 9.7	$ 0.9	$ 2.1	$ 15.4	$ 1.1	$ 0.5	$ 6.7	$ 11.0	$ 1.5	$ 3.8	$ 3.7	$ 483.2	$ 714.4
1988		$ 2.6	$ 2.5	$ 18.2	$ 4.4	$ 6.3	$ 2.1	$ 7.2	$ 1.3	$ 1.2	$ 1.6	$ 9.6	$ 1.0	$ 2.2	$ 15.0	$ 1.2	$ 0.5	$ 7.0	$ 11.1	$ 1.5	$ 3.6	$ 3.6	$ 501.5	$ 737.9
1989		$ 2.7	$ 2.5	$ 19.3	$ 4.9	$ 6.8	$ 2.2	$ 7.6	$ 1.5	$ 1.3	$ 1.8	$ 10.1	$ 1.0	$ 2.7	$ 14.4	$ 1.5	$ 0.5	$ 6.9	$ 10.4	$ 1.5	$ 4.2	$ 3.8	$ 514.3	$ 748.5
1990		$ 2.8	$ 2.3	$ 20.2	$ 5.4	$ 7.0	$ 2.4	$ 8.4	$ 1.0	$ 1.5	$ 2.3	$ 10.5	$ 1.0	$ 2.9	$ 11.6	$ 1.5	$ 0.7	$ 7.2	$ 10.4	$ 1.5	$ 4.5	$ 3.8	$ 516.0	$ 753.1
1991		$ 2.8	$ 2.3	$ 21.6	$ 5.9	$ 7.9	$ 1.5	$ 9.4	$ 1.5	$ 1.5	$ 2.3	$ 10.8	$ 1.0	$ 3.1	$ 11.5	$ 1.5	$ 0.8	$ 7.9	$ 10.8	$ 1.6	$ 4.8	$ 3.9	$ 559.3	$ 749.7
1992		$ 2.8	$ 2.1	$ 23.0	$ 6.3	$ 8.2	$ 2.0	$ 10.2	$ 0.8	$ 1.3	$ 2.5	$ 10.9	$ 1.0	$ 3.3	$ 11.4	$ 1.7	$ 0.9	$ 8.2	$ 11.2	$ 1.6	$ 4.8	$ 3.9	$ 637.6	$ 745.9
1993	$ 4.1	$ 2.9	$ 2.0	$ 24.1	$ 7.0	$ 8.3	$ 2.3	$ 11.5	$ 1.1	$ 1.3	$ 2.7	$ 11.0	$ 1.0	$ 3.4	$ 11.8	$ 1.6	$ 1.0	$ 8.1	$ 11.1	$ 1.5	$ 5.0	$ 4.0	$ 649.0	$ 751.3
1994	$ 3.8	$ 3.0	$ 2.0	$ 25.8	$ 7.3	$ 8.7	$ 2.7	$ 12.3	$ 1.3	$ 1.3	$ 3.0	$ 11.7	$ 1.1	$ 3.3	$ 11.2	$ 1.6	$ 1.0	$ 8.4	$ 12.1	$ 1.5	$ 4.9	$ 4.2	$ 659.5	$ 757.5
1995	$ 3.9	$ 3.0	$ 2.0	$ 30.7	$ 7.5	$ 9.1	$ 2.7	$ 13.3	$ 1.4	$ 1.4	$ 3.1	$ 11.2	$ 1.1	$ 3.5	$ 10.7	$ 1.8	$ 1.1	$ 8.2	$ 12.1	$ 1.5	$ 5.3	$ 4.3	$ 671.9	$ 772.5
1996	$ 4.1	$ 3.0	$ 2.1	$ 28.4	$ 8.3	$ 9.2	$ 2.7	$ 13.9	$ 1.7	$ 1.5	$ 3.5	$ 11.6	$ 1.1	$ 3.5	$ 12.0	$ 1.7	$ 1.1	$ 8.7	$ 12.3	$ 1.6	$ 5.9	$ 4.6	$ 688.4	$ 790.4
1997	$ 3.5	$ 3.2	$ 2.0	$ 29.8	$ 8.6	$ 10.1	$ 2.4	$ 14.9	$ 1.8	$ 1.5	$ 3.6	$ 12.2	$ 1.2	$ 3.2	$ 11.7	$ 1.8	$ 1.1	$ 8.9	$ 13.4	$ 1.5	$ 6.4	$ 4.7	$ 693.3	$ 795.7
1998	$ 3.3	$ 3.4	$ 2.0	$ 31.1	$ 8.4	$ 10.3	$ 2.5	$ 13.3	$ 2.0	$ 1.5	$ 3.6	$ 12.9	$ 1.1	$ 3.1	$ 10.9	$ 2.0	$ 1.2	$ 9.0	$ 12.7	$ 1.6	$ 6.4	$ 5.0	$ 693.5	$ 796.7
1999	$ 3.0	$ 3.3	$ 2.0	$ 33.2	$ 9.2	$ 11.1	$ 2.6	$ 14.8	$ 2.0	$ 1.4	$ 3.7	$ 12.7	$ 1.2	$ 3.0	$ 11.4	$ 2.2	$ 1.1	$ 9.2	$ 13.1	$ 1.6	$ 6.3	$ 4.5	$ 706.0	$ 811.0
2000	$ 3.3	$ 3.5	$ 1.9	$ 34.5	$ 9.3	$ 11.2	$ 2.6	$ 15.3	$ 2.1	$ 1.5	$ 4.1	$ 13.3	$ 1.2	$ 2.8	$ 10.2	$ 2.2	$ 1.2	$ 10.1	$ 13.5	$ 1.6	$ 7.0	$ 4.7	$ 730.4	$ 837.8
2001	$ 3.3	$ 3.6	$ 2.0	$ 35.4	$ 9.5	$ 11.7	$ 2.7	$ 15.8	$ 2.0	$ 1.5	$ 4.4	$ 13.2	$ 1.3	$ 3.2	$ 9.6	$ 2.1	$ 1.0	$ 10.5	$ 13.7	$ 1.6	$ 6.4	$ 5.2	$ 731.1	$ 841.0
2002	$ 3.2	$ 3.6	$ 2.0	$ 35.1	$ 10.1	$ 12.7	$ 2.8	$ 16.3	$ 2.0	$ 1.7	$ 4.9	$ 13.2	$ 1.3	$ 3.2	$ 9.6	$ 2.3	$ 1.0	$ 10.9	$ 13.2	$ 1.5	$ 6.8	$ 5.1	$ 743.4	$ 856.6
2003	$ 3.3	$ 3.7	$ 2.1	$ 35.6	$ 10.1	$ 13.5	$ 2.5	$ 16.7	$ 2.2	$ 1.6	$ 4.9	$ 13.5	$ 1.4	$ 3.2	$ 9.9	$ 2.2	$ 1.1	$ 12.1	$ 14.4	$ 1.6	$ 7.2	$ 4.7	$ 777.2	$ 895.2
2004	$ 3.1	$ 3.7	$ 2.0	$ 39.1	$ 10.9	$ 14.2	$ 2.7	$ 17.0	$ 2.4	$ 1.8	$ 5.0	$ 13.2	$ 1.4	$ 3.2	$ 10.2	$ 2.2	$ 1.3	$ 13.5	$ 15.4	$ 1.6	$ 7.3	$ 5.0	$ 817.0	$ 939.8
2005	$ 3.5	$ 3.7	$ 2.1	$ 41.2	$ 11.4	$ 15.7	$ 3.3	$ 17.2	$ 2.7	$ 2.0	$ 5.1	$ 13.9	$ 1.4	$ 3.7	$ 10.0	$ 2.3	$ 1.9	$ 14.0	$ 15.1	$ 1.6	$ 8.0	$ 5.1	$ 844.1	$ 971.5
2006	$ 3.6	$ 3.7	$ 2.1	$ 44.6	$ 12.2	$ 16.6	$ 3.2	$ 16.9	$ 2.7	$ 1.8	$ 5.2	$ 14.6	$ 1.4	$ 3.5	$ 10.4	$ 2.1	$ 2.0	$ 14.0	$ 15.5	$ 1.6	$ 8.7	$ 5.2	$ 866.3	$ 997.3
2007	$ 3.6	$ 3.8	$ 2.0	$ 47.6	$ 13.0	$ 17.1	$ 3.5	$ 17.5	$ 2.6	$ 1.9	$ 5.7	$ 15.5	$ 1.4	$ 3.5	$ 10.3	$ 2.1	$ 2.1	$ 13.7	$ 15.9	$ 1.5	$ 9.8	$ 5.3	$ 886.6	$1,020.0
2008	$ 3.5	$ 3.7	$ 2.0	$ 50.5	$ 12.9	$ 17.8	$ 3.6	$ 18.2	$ 2.7	$ 2.0	$ 6.0	$ 15.8	$ 1.4	$ 3.5	$ 10.3	$ 2.0	$ 2.2	$ 14.7	$ 17.1	$ 1.6	$ 9.5	$ 5.6	$ 895.5	$1,033.1
2009	$ 3.2	$ 3.5	$ 1.8	$ 57.3	$ 14.1	$ 19.6	$ 3.9	$ 18.3	$ 2.9	$ 2.0	$ 6.1	$ 14.7	$ 1.3	$ 2.8	$ 10.0	$ 2.0	$ 2.4	$ 15.3	$ 16.6	$ 1.5	$ 9.4	$ 5.5	$ 892.4	$1,025.8
2010	$ 3.3	$ 3.2	$ 1.8	$ 59.8	$ 14.4	$ 19.7	$ 4.0	$ 20.2	$ 3.1	$ 2.2	$ 6.6	$ 15.0	$ 1.3	$ 2.6	$ 10.6	$ 1.9	$ 2.4	$ 16.3	$ 16.5	$ 1.5	$ 9.4	$ 5.6	$ 941.8	$1,082.4

Table 9. $fGDP_{e+CO2}$, 3% SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	13%	9%	7%		11%	8%	6%		13%	8%	9%	7%	9%	6%	11%	16%	8%	10%	10%	65%	15%	12%
1981	12%	8%	7%		11%	8%	6%		13%	7%	8%	6%	9%	6%	9%	15%	8%	9%	9%	57%	12%	11%
1982	11%	7%	6%		10%	7%	6%		12%	6%	6%	5%	7%	5%	8%	15%	9%	9%	8%	50%	10%	10%
1983	10%	6%	5%		9%	6%	5%		11%	6%	6%	4%	6%	5%	6%	14%	7%	8%	8%	45%	9%	9%
1984	10%	6%	5%		8%	6%	5%		10%	5%	5%	4%	6%	4%	6%	13%	7%	7%	7%	39%	8%	9%
1985	9%	6%	5%		7%	5%	4%		10%	5%	5%	4%	6%	4%	6%	13%	6%	7%	7%	36%	7%	8%
1986	7%	5%	4%		6%	5%	3%		8%	5%	5%	3%	5%	4%	5%	10%	5%	6%	6%	31%	4%	7%
1987	7%	5%	4%		6%	5%	4%		8%	5%	5%	4%	5%	5%	6%	11%	5%	6%	6%	31%	4%	7%
1988	6%	5%	4%		5%	4%	3%		8%	4%	5%	3%	5%	5%	5%	10%	5%	6%	7%	29%	4%	7%
1989	6%	4%	4%		5%	4%	3%		8%	4%	4%	3%	5%	5%	5%	11%	5%	6%	7%	28%	5%	7%
1990	7%	5%	4%		6%	4%	4%		9%	5%	5%	3%	5%	5%	6%	13%	6%	6%	9%	32%	6%	7%
1991	6%	5%	4%		5%	4%	4%	8%	8%	5%	5%	4%	5%	5%	6%	11%	5%	6%	7%	26%	5%	7%
1992	6%	5%	4%	23%	6%	4%	4%	7%	8%	5%	4%	3%	6%	6%	6%	10%	5%	6%	7%	30%	5%	6%
1993	6%	4%	4%	19%	6%	4%	3%	7%	8%	4%	4%	3%	6%	5%	5%	9%	5%	5%	6%	27%	5%	7%
1994	5%	4%	4%	20%	5%	4%	3%	6%	7%	4%	4%	3%	6%	5%	5%	9%	4%	5%	7%	19%	4%	6%
1995	5%	4%	4%	23%	6%	5%	3%	6%	7%	4%	4%	3%	6%	5%	5%	10%	4%	5%	6%	19%	4%	6%
1996	6%	4%	4%	19%	5%	5%	4%	5%	7%	5%	5%	4%	6%	5%	5%	10%	4%	6%	7%	17%	4%	6%
1997	5%	3%	4%	16%	5%	4%	3%	4%	7%	4%	4%	3%	5%	4%	4%	9%	4%	5%	6%	16%	4%	6%
1998	4%	3%	3%	16%	4%	4%	3%	4%	6%	3%	4%	3%	5%	4%	5%	8%	4%	5%	6%	15%	3%	5%
1999	5%	3%	3%	17%	4%	4%	3%	4%	6%	3%	3%	2%	4%	4%	4%	9%	4%	5%	7%	14%	3%	5%
2000	5%	3%	4%	16%	5%	5%	3%	4%	7%	3%	3%	3%	3%	3%	4%	11%	4%	5%	7%	15%	5%	6%
2001	5%	3%	4%	15%	5%	4%	3%	4%	6%	3%	3%	3%	3%	3%	4%	10%	4%	5%	6%	13%	4%	6%
2002	5%	3%	4%	14%	5%	4%	3%	4%	6%	3%	3%	3%	4%	3%	4%	10%	4%	5%	6%	13%	4%	5%
2003	5%	3%	4%	14%	5%	4%	4%	5%	7%	4%	4%	3%	4%	4%	5%	12%	4%	6%	7%	15%	4%	6%
2004	6%	3%	5%	16%	6%	4%	4%	5%	8%	4%	5%	3%	5%	4%	5%	14%	5%	7%	8%	17%	5%	7%
2005	6%	4%	5%	19%	7%	5%	5%	6%	9%	5%	6%	4%	5%	4%	6%	16%	5%	7%	9%	19%	6%	8%
2006	7%	4%	6%	19%	8%	5%	5%	6%	9%	5%	6%	4%	6%	5%	6%	16%	5%	8%	10%	19%	6%	8%
2007	7%	4%	6%	19%	7%	5%	5%	6%	9%	5%	6%	4%	6%	5%	6%	16%	6%	9%	10%	20%	6%	8%
2008	8%	5%	8%	22%	9%	6%	7%	8%	11%	6%	7%	5%	7%	5%	7%	19%	6%	11%	12%	24%	8%	10%
2009	6%	4%	6%	18%	7%	5%	6%	6%	7%	5%	6%	4%	6%	5%	6%	13%	5%	8%	9%	19%	5%	7%
2010	6%	4%	6%	21%	7%	6%	6%	6%	8%	6%	6%	5%	6%	6%	6%	14%	5%	9%	10%	19%	6%	8%

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980		8%	14%	16%	16%	26%	4%	14%	17%	8%	17%	8%	7%	12%	21%	6%	5%	12%	11%	5%	8%	20%	12%
1981		6%	13%	16%	15%	23%	6%	13%	17%	9%	17%	8%	7%	12%	21%	6%	5%	11%	11%	5%	7%	17%	11%
1982		6%	12%	15%	14%	21%	7%	11%	19%	8%	15%	7%	6%	12%	23%	6%	6%	12%	11%	4%	7%	15%	10%
1983		5%	11%	14%	12%	18%	5%	10%	16%	9%	14%	6%	6%	12%	20%	5%	6%	12%	10%	4%	6%	14%	9%
1984		5%	10%	14%	11%	19%	5%	9%	14%	9%	14%	7%	5%	11%	19%	5%	6%	11%	10%	4%	6%	13%	9%
1985		5%	10%	14%	11%	19%	6%	9%	16%	9%	14%	6%	5%	10%	18%	5%	7%	12%	10%	4%	5%	13%	8%
1986		3%	9%	12%	8%	15%	5%	7%	9%	6%	10%	4%	4%	7%	18%	4%	6%	7%	9%	4%	4%	9%	7%
1987		4%	9%	12%	9%	17%	6%	7%	13%	10%	11%	5%	5%	8%	20%	4%	6%	9%	9%	4%	5%	11%	7%
1988		4%	8%	12%	8%	17%	6%	7%	13%	7%	10%	5%	5%	7%	18%	4%	6%	8%	9%	4%	4%	9%	7%
1989		4%	7%	12%	8%	19%	7%	7%	14%	8%	10%	5%	5%	8%	16%	3%	6%	8%	8%	3%	5%	10%	7%
1990		5%	8%	13%	10%	19%	11%	8%	8%	8%	11%	6%	6%	9%	15%	4%	8%	8%	9%	4%	5%	11%	7%
1991		4%	8%	14%	9%	17%	16%	7%	8%	7%	10%	5%	6%	8%	16%	4%	8%	8%	9%	4%	5%	8%	6%
1992		4%	8%	13%	8%	16%	19%	7%	5%	7%	10%	5%	5%	8%	15%	3%	8%	8%	10%	4%	5%	9%	7%
1993	9%	4%	7%	11%	8%	15%	30%	7%	5%	6%	8%	5%	5%	8%	15%	3%	8%	7%	9%	4%	5%	8%	6%
1994	8%	4%	7%	12%	8%	16%	32%	7%	6%	7%	9%	4%	5%	7%	14%	3%	9%	8%	9%	4%	4%	9%	6%
1995	8%	4%	7%	12%	8%	17%	34%	8%	7%	9%	9%	4%	6%	7%	14%	3%	9%	8%	9%	4%	5%	9%	6%
1996	9%	5%	8%	12%	8%	17%	36%	8%	8%	10%	10%	5%	6%	7%	14%	4%	10%	8%	9%	4%	5%	9%	6%
1997	8%	4%	7%	12%	8%	16%	30%	8%	7%	9%	8%	4%	6%	7%	11%	4%	6%	7%	9%	4%	5%	7%	6%
1998	7%	4%	6%	10%	7%	13%	14%	6%	6%	8%	7%	4%	4%	6%	10%	3%	6%	6%	8%	3%	4%	6%	5%
1999	7%	4%	6%	11%	9%	15%	12%	7%	9%	9%	8%	4%	5%	6%	9%	3%	6%	7%	9%	3%	4%	8%	5%
2000	7%	5%	7%	12%	11%	18%	18%	9%	11%	12%	10%	5%	5%	8%	8%	4%	6%	9%	9%	3%	5%	9%	6%
2001	7%	4%	6%	11%	11%	16%	18%	8%	10%	12%	9%	5%	4%	7%	8%	4%	5%	9%	9%	3%	5%	9%	5%
2002	7%	4%	7%	11%	11%	16%	21%	8%	11%	13%	9%	5%	4%	7%	8%	3%	5%	9%	8%	3%	5%	10%	5%
2003	9%	4%	7%	11%	11%	17%	34%	8%	11%	12%	10%	5%	5%	8%	9%	4%	5%	10%	9%	3%	5%	11%	6%
2004	11%	5%	8%	12%	13%	21%	31%	8%	13%	14%	12%	6%	6%	8%	10%	5%	7%	12%	10%	4%	6%	12%	7%
2005	12%	6%	10%	13%	15%	31%	41%	9%	16%	17%	14%	8%	6%	9%	10%	5%	9%	15%	10%	4%	6%	12%	7%
2006	12%	6%	11%	14%	15%	35%	36%	9%	19%	17%	14%	8%	7%	8%	10%	5%	9%	17%	11%	4%	7%	15%	8%
2007	12%	7%	11%	14%	16%	36%	40%	10%	20%	17%	16%	9%	7%	8%	10%	6%	8%	18%	12%	4%	8%	16%	8%
2008	14%	8%	14%	16%	19%	41%	54%	11%	24%	23%	18%	11%	8%	8%	12%	7%	8%	24%	14%	4%	10%	22%	10%
2009	12%	6%	12%	13%	14%	32%	45%	8%	19%	17%	14%	7%	6%	6%	9%	6%	7%	18%	12%	4%	8%	16%	8%
2010	13%	7%	13%	15%	16%	37%	63%	11%	24%	21%	16%	9%	7%	6%	10%	7%	9%	22%	12%	4%	8%	22%	9%

Table 10. Flat Tax 2005$ U.S. Billions, 2.5% SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland
1980	$ 256.4	$ 32.9	$ 10.5		$ 10.8	$ 50.8	$ 20.0		$ 24.6	$ 26.2	$ 3.0	$ 3.5	$ 3.0
1981	$ 249.5	$ 32.2	$ 11.0		$ 10.4	$ 50.7	$ 19.6		$ 23.7	$ 23.8	$ 2.9	$ 3.2	$ 2.8
1982	$ 236.8	$ 30.7	$ 11.9		$ 9.8	$ 48.3	$ 19.1		$ 22.7	$ 22.7	$ 2.7	$ 3.0	$ 2.5
1983	$ 235.6	$ 31.0	$ 12.1		$ 9.3	$ 46.6	$ 18.6		$ 22.0	$ 21.9	$ 2.7	$ 2.8	$ 2.4
1984	$ 248.0	$ 30.3	$ 11.3		$ 9.9	$ 50.2	$ 18.8		$ 23.3	$ 21.2	$ 2.9	$ 2.9	$ 2.3
1985	$ 247.3	$ 31.6	$ 11.0		$ 10.3	$ 49.7	$ 19.6		$ 23.8	$ 21.3	$ 3.0	$ 3.4	$ 2.5
1986	$ 247.7	$ 32.0	$ 10.7		$ 10.5	$ 47.1	$ 19.9		$ 23.0	$ 19.5	$ 2.9	$ 3.5	$ 2.7
1987	$ 256.1	$ 32.6	$ 10.8		$ 10.8	$ 47.8	$ 21.0		$ 23.9	$ 19.1	$ 3.0	$ 3.5	$ 2.7
1988	$ 267.9	$ 32.2	$ 10.9		$ 10.9	$ 51.5	$ 21.3		$ 25.7	$ 18.3	$ 2.8	$ 3.2	$ 2.6
1989	$ 272.3	$ 32.9	$ 11.9		$ 10.9	$ 53.1	$ 22.1		$ 26.4	$ 19.6	$ 2.8	$ 3.2	$ 2.8
1990	$ 270.6	$ 32.3	$ 12.0		$ 11.3	$ 56.2	$ 22.3		$ 25.3	$ 19.7	$ 3.0	$ 3.1	$ 2.9
1991	$ 268.3	$ 32.7	$ 12.7		$ 11.7	$ 57.3	$ 22.4	$ 49.9	$ 25.0	$ 21.1	$ 3.2	$ 3.4	$ 2.8
1992	$ 273.5	$ 31.0	$ 13.0	$ 108.5	$ 11.4	$ 57.6	$ 22.3	$ 48.1	$ 26.0	$ 20.5	$ 3.1	$ 3.3	$ 2.7
1993	$ 278.6	$ 31.3	$ 12.4	$ 100.0	$ 11.9	$ 57.1	$ 22.1	$ 47.9	$ 26.1	$ 19.8	$ 3.1	$ 3.2	$ 2.8
1994	$ 282.5	$ 30.7	$ 12.7	$ 90.7	$ 11.9	$ 60.0	$ 21.7	$ 47.0	$ 26.6	$ 19.4	$ 3.1	$ 3.5	$ 3.1
1995	$ 285.6	$ 30.1	$ 13.1	$ 86.1	$ 12.0	$ 59.9	$ 23.2	$ 47.8	$ 27.3	$ 20.0	$ 3.2	$ 3.7	$ 2.7
1996	$ 295.6	$ 31.6	$ 12.7	$ 80.9	$ 12.2	$ 60.9	$ 22.7	$ 47.8	$ 27.9	$ 21.0	$ 3.5	$ 3.9	$ 2.8
1997	$ 299.4	$ 30.4	$ 14.2	$ 74.9	$ 12.8	$ 62.2	$ 22.8	$ 47.7	$ 29.3	$ 20.6	$ 3.5	$ 4.0	$ 2.9
1998	$ 301.6	$ 30.2	$ 14.8	$ 74.3	$ 12.8	$ 59.8	$ 23.7	$ 46.7	$ 29.5	$ 22.0	$ 3.6	$ 3.2	$ 2.7
1999	$ 304.9	$ 29.9	$ 16.0	$ 78.3	$ 12.7	$ 62.1	$ 23.7	$ 45.0	$ 30.4	$ 21.7	$ 3.5	$ 3.1	$ 2.6
2000	$ 314.8	$ 30.1	$ 16.9	$ 80.5	$ 13.2	$ 64.5	$ 24.0	$ 45.9	$ 30.8	$ 21.6	$ 3.4	$ 2.9	$ 2.7
2001	$ 309.0	$ 30.7	$ 17.2	$ 77.4	$ 14.0	$ 64.1	$ 23.9	$ 47.1	$ 30.2	$ 21.8	$ 3.6	$ 3.0	$ 2.9
2002	$ 311.3	$ 30.2	$ 18.1	$ 80.6	$ 13.6	$ 64.4	$ 24.3	$ 45.9	$ 30.5	$ 21.6	$ 3.8	$ 2.9	$ 2.9
2003	$ 314.2	$ 30.7	$ 18.6	$ 83.3	$ 13.8	$ 67.1	$ 25.4	$ 45.7	$ 32.1	$ 21.9	$ 4.0	$ 3.3	$ 3.6
2004	$ 320.8	$ 31.3	$ 19.7	$ 85.9	$ 14.2	$ 67.4	$ 25.2	$ 45.6	$ 32.8	$ 22.1	$ 4.1	$ 3.0	$ 3.3
2005	$ 322.1	$ 31.3	$ 20.6	$ 85.2	$ 13.5	$ 66.6	$ 25.3	$ 44.8	$ 32.7	$ 22.2	$ 4.2	$ 2.8	$ 2.8
2006	$ 318.0	$ 31.4	$ 20.2	$ 87.8	$ 13.4	$ 66.6	$ 25.1	$ 45.0	$ 32.1	$ 22.0	$ 4.0	$ 3.2	$ 3.3
2007	$ 323.4	$ 30.6	$ 20.8	$ 84.7	$ 12.5	$ 67.4	$ 24.7	$ 43.6	$ 31.7	$ 22.8	$ 3.8	$ 3.0	$ 3.2
2008	$ 313.6	$ 30.3	$ 19.0	$ 87.5	$ 12.3	$ 65.3	$ 24.1	$ 43.6	$ 30.8	$ 22.6	$ 3.8	$ 2.8	$ 2.9
2009	$ 291.5	$ 27.7	$ 17.6	$ 79.4	$ 12.0	$ 59.3	$ 21.9	$ 40.7	$ 29.3	$ 20.7	$ 3.5	$ 2.6	$ 2.7
2010	$ 302.3	$ 28.4	$ 16.8	$ 89.2	$ 12.5	$ 63.4	$ 22.4	$ 43.0	$ 29.1	$ 20.7	$ 3.8	$ 2.7	$ 3.1

Year	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq
1980	$ 1.8	$ 4.4	$ 5.0	$ 10.7	$ 7.1	$ 10.0	$ 77.8	$ -	$ 2.1		$ 2.8	$ 4.5	$ 15.6	$ 4.6	$ 6.3	$ 2.8
1981	$ 1.7	$ 3.9	$ 4.8	$ 11.0	$ 7.2	$ 9.4	$ 77.3	$ -	$ 2.2		$ 2.8	$ 4.5	$ 18.1	$ 4.9	$ 5.8	$ 2.0
1982	$ 1.5	$ 3.4	$ 5.2	$ 11.2	$ 6.8	$ 9.3	$ 80.9	$ -	$ 2.2		$ 2.7	$ 4.5	$ 18.8	$ 5.0	$ 7.2	$ 2.0
1983	$ 1.6	$ 3.2	$ 5.3	$ 11.7	$ 6.0	$ 8.8	$ 85.6	$ -	$ 2.3		$ 2.9	$ 4.4	$ 19.7	$ 5.1	$ 8.4	$ 2.3
1984	$ 1.6	$ 3.1	$ 5.6	$ 12.6	$ 6.2	$ 9.7	$ 92.6	$ -	$ 2.5		$ 3.0	$ 4.4	$ 22.7	$ 5.3	$ 8.1	$ 2.3
1985	$ 1.8	$ 3.3	$ 5.2	$ 12.8	$ 6.3	$ 10.3	$ 99.8	$ -	$ 2.4		$ 3.3	$ 4.5	$ 24.0	$ 5.4	$ 8.6	$ 2.6
1986	$ 2.0	$ 3.5	$ 5.6	$ 12.6	$ 6.4	$ 11.4	$ 105.8	$ -	$ 2.4		$ 3.4	$ 4.1	$ 25.4	$ 5.9	$ 8.9	$ 3.0
1987	$ 1.9	$ 3.4	$ 5.9	$ 13.5	$ 6.3	$ 11.8	$ 112.9	$ -	$ 2.3		$ 3.7	$ 4.1	$ 26.1	$ 6.3	$ 9.4	$ 2.9
1988	$ 1.8	$ 3.3	$ 6.0	$ 13.2	$ 6.2	$ 11.9	$ 120.3	$ -	$ 2.5		$ 4.0	$ 3.9	$ 28.0	$ 6.7	$ 9.7	$ 3.2
1989	$ 1.9	$ 3.1	$ 6.0	$ 14.0	$ 6.5	$ 12.2	$ 122.2	$ -	$ 2.6		$ 4.2	$ 3.8	$ 29.7	$ 7.5	$ 10.5	$ 3.4
1990	$ 1.9	$ 3.1	$ 5.5	$ 14.4	$ 6.6	$ 12.7	$ 121.8	$ -	$ 2.2		$ 4.4	$ 3.6	$ 31.1	$ 8.4	$ 10.9	$ 3.7
1991	$ 1.7	$ 3.0	$ 5.8	$ 14.4	$ 6.8	$ 13.2	$ 127.2	$ -	$ 2.6		$ 4.4	$ 3.5	$ 33.3	$ 9.1	$ 12.2	$ 2.3
1992	$ 1.9	$ 3.2	$ 5.9	$ 14.8	$ 6.6	$ 12.7	$ 131.5	$ -	$ 2.9		$ 4.3	$ 3.3	$ 35.4	$ 9.7	$ 12.6	$ 3.1
1993	$ 1.8	$ 3.3	$ 6.4	$ 15.2	$ 6.7	$ 13.9	$ 137.7	$ -	$ 3.0	$ 6.3	$ 4.5	$ 3.2	$ 37.1	$ 10.7	$ 12.8	$ 3.6
1994	$ 1.9	$ 3.5	$ 6.3	$ 15.1	$ 7.3	$ 14.4	$ 147.9	$ -	$ 2.9	$ 5.9	$ 4.5	$ 3.1	$ 39.8	$ 11.3	$ 13.5	$ 4.1
1995	$ 2.0	$ 3.4	$ 6.4	$ 15.5	$ 7.6	$ 15.5	$ 153.1	$ -	$ 2.9	$ 6.0	$ 4.6	$ 3.1	$ 47.2	$ 11.5	$ 14.1	$ 4.1
1996	$ 2.1	$ 3.6	$ 7.0	$ 16.2	$ 7.7	$ 16.5	$ 161.4	$ -	$ 3.1	$ 6.3	$ 4.7	$ 3.2	$ 43.7	$ 12.8	$ 14.1	$ 4.1
1997	$ 2.2	$ 3.5	$ 7.0	$ 17.8	$ 7.9	$ 17.5	$ 156.7	$ -	$ 3.4	$ 5.3	$ 4.9	$ 3.2	$ 46.0	$ 13.2	$ 15.6	$ 3.7
1998	$ 2.3	$ 3.6	$ 7.3	$ 18.1	$ 8.3	$ 17.4	$ 156.6	$ -	$ 3.5	$ 5.1	$ 5.2	$ 3.1	$ 48.0	$ 12.9	$ 15.8	$ 3.9
1999	$ 2.4	$ 3.5	$ 7.5	$ 19.1	$ 7.8	$ 18.0	$ 157.5	$ -	$ 3.1	$ 4.6	$ 5.1	$ 3.1	$ 51.1	$ 14.2	$ 17.1	$ 4.1
2000	$ 2.2	$ 3.3	$ 7.4	$ 19.1	$ 8.0	$ 18.5	$ 169.9	$ -	$ 3.1	$ 5.1	$ 5.4	$ 3.0	$ 53.2	$ 14.4	$ 17.3	$ 4.0
2001	$ 2.2	$ 3.2	$ 6.9	$ 19.9	$ 8.2	$ 18.7	$ 173.2	$ -	$ 3.1	$ 5.1	$ 5.5	$ 3.1	$ 54.6	$ 14.6	$ 18.0	$ 4.2
2002	$ 2.3	$ 3.1	$ 6.5	$ 20.1	$ 7.7	$ 18.6	$ 183.7	$ -	$ 3.0	$ 5.0	$ 5.5	$ 3.1	$ 54.1	$ 15.5	$ 19.6	$ 4.3
2003	$ 2.4	$ 3.3	$ 7.2	$ 20.1	$ 8.2	$ 18.6	$ 212.6	$ -	$ 3.1	$ 5.0	$ 5.7	$ 3.2	$ 54.9	$ 15.6	$ 20.8	$ 3.8
2004	$ 2.6	$ 3.2	$ 7.6	$ 21.0	$ 8.4	$ 19.1	$ 246.8	$ -	$ 3.0	$ 4.8	$ 5.6	$ 3.1	$ 60.2	$ 16.8	$ 21.9	$ 4.2
2005	$ 2.3	$ 3.1	$ 8.2	$ 22.0	$ 8.3	$ 19.9	$ 274.7	$ -	$ 3.2	$ 5.5	$ 5.7	$ 3.2	$ 63.4	$ 17.5	$ 24.2	$ 5.1
2006	$ 2.2	$ 3.1	$ 8.4	$ 22.3	$ 7.8	$ 20.6	$ 299.3	$ -	$ 3.3	$ 5.6	$ 5.7	$ 3.2	$ 68.8	$ 18.8	$ 25.6	$ 4.9
2007	$ 2.3	$ 3.1	$ 9.0	$ 22.9	$ 7.7	$ 21.5	$ 317.2	$ -	$ 3.2	$ 5.6	$ 5.9	$ 3.1	$ 73.3	$ 20.0	$ 26.3	$ 5.3
2008	$ 2.1	$ 2.9	$ 9.2	$ 23.1	$ 8.2	$ 22.9	$ 331.1	$ -	$ 3.4	$ 5.3	$ 5.7	$ 3.0	$ 77.8	$ 19.9	$ 27.5	$ 5.6
2009	$ 2.4	$ 2.8	$ 9.1	$ 23.3	$ 7.2	$ 21.8	$ 366.0	$ -	$ 3.4	$ 4.9	$ 5.4	$ 2.8	$ 88.2	$ 21.8	$ 30.2	$ 6.0
2010	$ 2.4	$ 3.1	$ 9.4	$ 22.7	$ 7.4	$ 24.1	$ 399.8	$ -	$ 3.5	$ 5.1	$ 5.0	$ 2.8	$ 92.1	$ 22.3	$ 30.3	$ 6.1

Year	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World 44	World
1980	$ 7.1	$ 1.7	$ 1.7	$ 1.4	$ 12.9	$ 1.1	$ 3.7	$ 23.0	$ 1.3	$ 0.7	$ 9.5	$ 12.6	$ 2.5	$ 3.7	$ 5.1	$ 685.2	$ 989.8
1981	$ 7.4	$ 1.3	$ 1.4	$ 1.5	$ 14.3	$ 1.1	$ 3.2	$ 20.8	$ 1.1	$ 0.8	$ 9.4	$ 13.7	$ 2.1	$ 3.4	$ 5.5	$ 672.5	$ 977.1
1982	$ 7.5	$ 1.2	$ 1.5	$ 1.6	$ 15.1	$ 1.1	$ 3.0	$ 20.9	$ 1.5	$ 0.8	$ 8.9	$ 14.7	$ 2.0	$ 3.9	$ 5.5	$ 659.9	$ 971.5
1983	$ 8.0	$ 1.4	$ 1.5	$ 1.9	$ 14.0	$ 1.1	$ 3.0	$ 21.0	$ 1.5	$ 0.7	$ 8.9	$ 14.8	$ 2.1	$ 4.2	$ 5.2	$ 661.6	$ 979.5
1984	$ 8.8	$ 1.4	$ 1.4	$ 2.2	$ 15.0	$ 1.2	$ 3.2	$ 21.9	$ 1.5	$ 0.8	$ 9.9	$ 15.9	$ 2.1	$ 4.4	$ 5.2	$ 695.8	$1,026.0
1985	$ 9.3	$ 1.4	$ 1.5	$ 2.4	$ 15.1	$ 1.2	$ 3.3	$ 22.7	$ 1.6	$ 0.7	$ 9.6	$ 16.2	$ 2.2	$ 5.0	$ 5.2	$ 711.1	$1,049.4
1986	$ 9.7	$ 1.6	$ 1.6	$ 2.6	$ 14.4	$ 1.3	$ 3.2	$ 23.0	$ 1.7	$ 0.8	$ 10.2	$ 16.6	$ 2.4	$ 5.7	$ 5.6	$ 720.2	$1,070.9
1987	$ 10.0	$ 1.8	$ 1.7	$ 2.5	$ 14.9	$ 1.3	$ 3.3	$ 23.7	$ 1.7	$ 0.8	$ 10.3	$ 16.9	$ 2.3	$ 5.9	$ 5.7	$ 744.4	$1,100.5
1988	$ 11.2	$ 2.1	$ 1.9	$ 2.5	$ 14.9	$ 1.5	$ 3.4	$ 23.1	$ 1.8	$ 0.8	$ 10.8	$ 17.2	$ 2.3	$ 5.6	$ 5.6	$ 772.6	$1,136.8
1989	$ 11.8	$ 2.3	$ 2.0	$ 2.8	$ 15.6	$ 1.5	$ 4.1	$ 22.2	$ 2.3	$ 0.8	$ 10.7	$ 16.0	$ 2.3	$ 6.4	$ 5.8	$ 792.4	$1,153.1
1990	$ 13.0	$ 1.5	$ 2.3	$ 3.5	$ 16.2	$ 1.5	$ 4.4	$ 17.9	$ 2.4	$ 1.0	$ 11.2	$ 16.0	$ 2.3	$ 7.0	$ 5.9	$ 795.0	$1,160.3
1991	$ 14.5	$ 2.3	$ 2.2	$ 3.6	$ 16.6	$ 1.6	$ 4.8	$ 17.7	$ 2.4	$ 1.2	$ 12.2	$ 16.7	$ 2.4	$ 7.4	$ 6.0	$ 861.7	$1,154.9
1992	$ 15.7	$ 1.3	$ 2.0	$ 3.9	$ 16.8	$ 1.6	$ 5.1	$ 17.6	$ 2.6	$ 1.4	$ 12.6	$ 17.2	$ 2.5	$ 7.4	$ 6.0	$ 982.2	$1,149.2
1993	$ 17.8	$ 1.6	$ 2.0	$ 4.1	$ 17.0	$ 1.6	$ 5.2	$ 18.2	$ 2.5	$ 1.6	$ 12.5	$ 17.1	$ 2.3	$ 7.8	$ 6.1	$ 999.9	$1,157.5
1994	$ 18.9	$ 2.0	$ 2.0	$ 4.6	$ 18.1	$ 1.7	$ 5.1	$ 17.3	$ 2.5	$ 1.6	$ 12.9	$ 18.6	$ 2.3	$ 7.5	$ 6.4	$1,016.0	$1,167.1
1995	$ 20.5	$ 2.1	$ 2.1	$ 4.8	$ 17.3	$ 1.6	$ 5.4	$ 16.5	$ 2.7	$ 1.6	$ 12.6	$ 18.7	$ 2.4	$ 8.2	$ 6.7	$1,035.1	$1,190.1
1996	$ 21.3	$ 2.6	$ 2.2	$ 5.5	$ 17.9	$ 1.6	$ 5.5	$ 18.5	$ 2.6	$ 1.7	$ 13.4	$ 18.9	$ 2.4	$ 9.1	$ 7.2	$1,060.5	$1,217.7
1997	$ 22.9	$ 2.8	$ 2.3	$ 5.5	$ 18.8	$ 1.8	$ 4.9	$ 18.1	$ 2.8	$ 1.8	$ 13.7	$ 20.6	$ 2.4	$ 9.8	$ 7.2	$1,068.0	$1,225.9
1998	$ 20.4	$ 3.0	$ 2.2	$ 5.5	$ 19.9	$ 1.8	$ 4.8	$ 16.9	$ 3.0	$ 1.8	$ 13.9	$ 19.6	$ 2.5	$ 9.9	$ 7.6	$1,068.5	$1,227.4
1999	$ 22.7	$ 3.0	$ 2.1	$ 5.7	$ 19.5	$ 1.9	$ 4.6	$ 17.5	$ 3.4	$ 1.7	$ 14.2	$ 20.2	$ 2.5	$ 9.8	$ 6.9	$1,087.7	$1,249.5
2000	$ 23.6	$ 3.2	$ 2.2	$ 6.4	$ 20.6	$ 1.9	$ 4.3	$ 15.7	$ 3.4	$ 1.9	$ 15.6	$ 20.7	$ 2.4	$ 10.8	$ 7.2	$1,125.2	$1,290.8
2001	$ 24.3	$ 3.1	$ 2.3	$ 6.7	$ 20.4	$ 2.1	$ 4.9	$ 14.8	$ 3.3	$ 1.5	$ 16.2	$ 21.1	$ 2.5	$ 9.9	$ 8.0	$1,126.4	$1,295.7
2002	$ 25.1	$ 3.0	$ 2.6	$ 7.5	$ 20.4	$ 2.0	$ 4.9	$ 14.8	$ 3.5	$ 1.6	$ 16.7	$ 20.4	$ 2.4	$ 10.4	$ 7.9	$1,145.3	$1,319.7
2003	$ 25.8	$ 3.4	$ 2.5	$ 7.6	$ 20.8	$ 2.1	$ 5.0	$ 15.3	$ 3.3	$ 1.7	$ 18.6	$ 22.2	$ 2.4	$ 11.1	$ 7.2	$1,197.3	$1,379.2
2004	$ 26.1	$ 3.6	$ 2.8	$ 7.8	$ 20.3	$ 2.2	$ 5.0	$ 15.7	$ 3.4	$ 2.1	$ 20.9	$ 23.7	$ 2.4	$ 11.3	$ 7.7	$1,258.7	$1,447.9
2005	$ 26.5	$ 4.1	$ 3.0	$ 7.9	$ 21.4	$ 2.2	$ 5.7	$ 15.4	$ 3.5	$ 3.0	$ 21.6	$ 23.2	$ 2.5	$ 12.4	$ 7.8	$1,300.5	$1,496.7
2006	$ 26.0	$ 4.1	$ 2.8	$ 8.1	$ 22.5	$ 2.2	$ 5.5	$ 16.1	$ 3.2	$ 3.1	$ 21.6	$ 23.9	$ 2.4	$ 13.5	$ 8.1	$1,334.6	$1,536.5
2007	$ 27.0	$ 4.0	$ 2.9	$ 8.7	$ 23.9	$ 2.1	$ 5.3	$ 15.9	$ 3.2	$ 3.2	$ 21.1	$ 24.5	$ 2.3	$ 15.0	$ 8.2	$1,365.9	$1,571.3
2008	$ 28.0	$ 4.2	$ 3.0	$ 9.2	$ 24.3	$ 2.2	$ 5.3	$ 15.8	$ 3.0	$ 3.4	$ 22.6	$ 26.3	$ 2.4	$ 14.7	$ 8.7	$1,379.6	$1,591.6
2009	$ 28.2	$ 4.4	$ 3.1	$ 9.4	$ 22.6	$ 2.0	$ 4.2	$ 15.4	$ 3.1	$ 3.7	$ 23.5	$ 25.6	$ 2.4	$ 14.4	$ 8.5	$1,374.9	$1,580.4
2010	$ 31.2	$ 4.8	$ 3.3	$ 10.2	$ 23.2	$ 2.0	$ 4.0	$ 16.4	$ 2.9	$ 3.7	$ 25.2	$ 25.4	$ 2.3	$ 14.5	$ 8.6	$1,451.0	$1,667.6

Table 11. *fGDP*$_{e+CO2}$, 2.5% SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	14%	10%	8%		12%	9%	7%		15%	9%	9%	8%	11%	7%	11%	18%	10%	11%	10%	78%	15%	13%	
1981	14%	9%	8%		12%	8%	7%		14%	8%	8%	7%	10%	6%	10%	17%	9%	10%	10%	69%	12%	12%	
1982	13%	8%	7%		11%	7%	6%		13%	7%	7%	6%	8%	6%	8%	17%	10%	10%	9%	62%	10%	11%	
1983	11%	7%	6%		10%	6%	5%		12%	6%	6%	5%	7%	5%	7%	15%	8%	9%	8%	56%	9%	10%	
1984	11%	7%	6%		9%	6%	5%		12%	6%	6%	4%	6%	5%	6%	15%	8%	8%	8%	49%	8%	10%	
1985	10%	7%	5%		8%	6%	5%		11%	6%	6%	5%	7%	5%	6%	15%	7%	8%	8%	46%	7%	9%	
1986	8%	6%	4%		7%	5%	4%		9%	5%	5%	4%	6%	5%	6%	12%	6%	7%	7%	41%	4%	8%	
1987	8%	6%	5%		7%	5%	4%		9%	5%	6%	4%	6%	5%	6%	13%	6%	7%	7%	40%	4%	8%	
1988	8%	5%	5%		6%	5%	4%		9%	5%	5%	4%	5%	5%	6%	12%	6%	7%	7%	37%	4%	8%	
1989	8%	5%	5%		6%	5%	4%		9%	5%	5%	4%	5%	5%	6%	13%	6%	6%	8%	36%	5%	8%	
1990	8%	6%	5%		7%	5%	4%		10%	5%	5%	4%	6%	5%	7%	14%	7%	7%	9%	40%	6%	8%	
1991	7%	6%	5%	29%	6%	5%	4%	8%	10%	5%	5%	4%	6%	5%	7%	12%	6%	7%	8%	34%	5%	8%	
1992	7%	5%	5%	29%	7%	5%	4%	8%	9%	5%	5%	4%	7%	6%	7%	11%	6%	6%	8%	37%	5%	7%	
1993	7%	5%	4%	24%	6%	5%	4%	7%	9%	5%	5%	3%	7%	6%	5%	11%	6%	6%	7%	34%	5%	8%	11%
1994	6%	5%	4%	26%	6%	5%	4%	7%	8%	5%	5%	3%	7%	5%	5%	10%	5%	6%	8%	25%	4%	7%	11%
1995	6%	4%	4%	29%	7%	5%	4%	7%	8%	5%	5%	3%	6%	6%	5%	11%	5%	6%	7%	24%	4%	7%	10%
1996	7%	5%	5%	24%	6%	5%	4%	6%	8%	5%	5%	4%	7%	5%	6%	12%	6%	7%	8%	23%	4%	7%	11%
1997	6%	4%	4%	21%	5%	5%	4%	5%	8%	4%	5%	4%	6%	5%	5%	11%	6%	6%	7%	21%	4%	7%	9%
1998	6%	4%	4%	21%	5%	5%	3%	4%	7%	4%	4%	3%	5%	5%	5%	10%	5%	6%	7%	19%	3%	6%	9%
1999	6%	4%	4%	22%	5%	5%	4%	4%	7%	4%	4%	3%	5%	5%	5%	11%	5%	5%	7%	18%	3%	6%	8%
2000	6%	4%	4%	21%	6%	5%	4%	4%	8%	4%	4%	3%	4%	4%	5%	13%	6%	6%	8%	19%	5%	7%	9%
2001	6%	3%	4%	19%	6%	5%	3%	4%	7%	4%	4%	3%	4%	3%	5%	12%	5%	6%	7%	17%	4%	6%	9%
2002	6%	3%	4%	18%	6%	5%	3%	4%	7%	4%	4%	3%	4%	3%	5%	12%	5%	6%	7%	17%	4%	6%	9%
2003	6%	3%	5%	19%	6%	5%	4%	5%	8%	4%	5%	4%	5%	4%	6%	13%	5%	7%	8%	19%	4%	7%	11%
2004	7%	4%	5%	21%	7%	5%	5%	6%	9%	5%	6%	4%	5%	4%	6%	15%	6%	7%	8%	22%	5%	7%	12%
2005	7%	4%	6%	23%	8%	5%	5%	6%	10%	5%	6%	4%	6%	5%	6%	18%	6%	8%	10%	23%	6%	8%	13%
2006	7%	5%	7%	23%	8%	5%	6%	7%	10%	5%	6%	5%	6%	5%	6%	18%	6%	9%	10%	23%	6%	9%	14%
2007	8%	5%	7%	22%	8%	5%	6%	7%	10%	6%	7%	5%	6%	5%	6%	18%	7%	9%	11%	24%	6%	9%	13%
2008	9%	6%	8%	25%	10%	6%	7%	8%	12%	7%	8%	6%	7%	5%	7%	20%	7%	12%	12%	28%	8%	11%	16%
2009	7%	4%	6%	22%	8%	6%	6%	7%	8%	6%	6%	4%	6%	5%	6%	15%	6%	9%	10%	23%	5%	8%	14%
2010	7%	5%	7%	25%	8%	6%	6%	7%	9%	6%	7%	5%	7%	6%	7%	15%	6%	10%	11%	23%	6%	9%	14%

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World 44
1980	8%	16%	19%	18%	29%	5%	16%	19%	9%	19%	9%	8%	14%	26%	6%	6%	13%	15%	6%	8%	22%	13%
1981	7%	15%	19%	17%	26%	7%	15%	18%	11%	18%	9%	8%	15%	26%	6%	7%	13%	14%	5%	8%	19%	13%
1982	7%	14%	18%	16%	24%	8%	13%	21%	9%	16%	8%	7%	14%	28%	6%	7%	13%	14%	5%	8%	17%	11%
1983	6%	12%	17%	14%	21%	6%	11%	18%	10%	16%	7%	7%	14%	25%	6%	7%	14%	14%	5%	7%	16%	10%
1984	5%	12%	18%	13%	22%	5%	11%	16%	11%	16%	8%	6%	14%	23%	6%	8%	13%	14%	4%	7%	15%	10%
1985	6%	12%	18%	13%	22%	7%	10%	18%	11%	16%	7%	5%	12%	23%	5%	9%	14%	13%	4%	6%	15%	9%
1986	4%	10%	15%	10%	18%	6%	8%	15%	11%	13%	5%	5%	10%	22%	4%	8%	9%	13%	4%	5%	11%	8%
1987	5%	11%	16%	11%	21%	7%	9%	14%	12%	13%	6%	5%	11%	24%	4%	8%	11%	13%	4%	6%	13%	8%
1988	5%	10%	15%	10%	21%	8%	8%	15%	9%	11%	6%	6%	9%	22%	4%	8%	10%	13%	4%	5%	10%	8%
1989	5%	9%	15%	10%	23%	8%	9%	16%	10%	12%	6%	6%	11%	20%	4%	8%	10%	12%	4%	6%	12%	8%
1990	6%	9%	17%	12%	23%	14%	9%	9%	11%	14%	7%	6%	11%	18%	5%	10%	10%	13%	4%	6%	13%	8%
1991	5%	10%	18%	11%	21%	19%	9%	12%	9%	12%	6%	6%	11%	20%	4%	11%	10%	13%	4%	6%	10%	8%
1992	5%	9%	17%	10%	20%	23%	9%	7%	8%	12%	6%	6%	11%	19%	4%	11%	10%	13%	4%	6%	11%	8%
1993	5%	9%	15%	10%	19%	36%	9%	6%	8%	11%	6%	6%	10%	19%	4%	11%	9%	12%	4%	6%	9%	7%
1994	5%	9%	15%	10%	20%	39%	8%	8%	9%	11%	5%	6%	10%	17%	4%	13%	10%	13%	4%	5%	10%	7%
1995	5%	9%	16%	10%	21%	41%	9%	8%	11%	11%	5%	6%	10%	17%	4%	13%	9%	13%	4%	6%	11%	7%
1996	6%	9%	15%	10%	21%	43%	9%	10%	12%	12%	6%	6%	10%	17%	5%	13%	10%	13%	4%	6%	11%	7%
1997	5%	8%	15%	10%	20%	35%	9%	9%	12%	10%	6%	6%	9%	14%	4%	9%	9%	13%	4%	6%	9%	7%
1998	5%	8%	14%	9%	17%	18%	8%	8%	10%	9%	5%	5%	8%	12%	4%	8%	8%	12%	4%	5%	8%	6%
1999	5%	8%	14%	11%	19%	16%	9%	11%	11%	10%	5%	6%	10%	12%	4%	8%	9%	12%	3%	5%	10%	6%
2000	6%	8%	15%	13%	22%	21%	10%	13%	14%	12%	6%	5%	9%	11%	5%	8%	12%	12%	3%	6%	11%	7%
2001	5%	8%	14%	13%	21%	22%	9%	12%	14%	12%	6%	5%	10%	10%	4%	7%	11%	12%	3%	6%	11%	6%
2002	5%	8%	13%	13%	20%	25%	9%	13%	15%	12%	5%	5%	9%	10%	4%	7%	12%	11%	3%	6%	13%	6%
2003	5%	9%	13%	13%	21%	41%	9%	12%	14%	12%	6%	6%	10%	11%	5%	7%	12%	12%	4%	6%	14%	7%
2004	6%	9%	15%	15%	25%	36%	9%	14%	17%	14%	7%	7%	9%	11%	5%	8%	15%	13%	4%	6%	14%	8%
2005	7%	11%	16%	18%	35%	47%	10%	18%	19%	16%	9%	7%	11%	12%	6%	12%	18%	14%	4%	7%	14%	9%
2006	7%	12%	17%	18%	39%	42%	10%	20%	19%	16%	9%	7%	10%	12%	6%	11%	20%	15%	4%	8%	17%	9%
2007	7%	12%	17%	18%	40%	46%	11%	22%	20%	18%	10%	8%	9%	12%	6%	10%	20%	15%	4%	9%	17%	9%
2008	9%	15%	19%	21%	45%	60%	12%	26%	25%	20%	12%	9%	10%	13%	8%	10%	26%	17%	5%	11%	23%	11%
2009	7%	13%	16%	16%	37%	51%	9%	21%	19%	16%	8%	7%	7%	11%	6%	8%	20%	15%	4%	9%	18%	9%
2010	8%	14%	18%	18%	42%	69%	12%	26%	23%	19%	9%	8%	7%	12%	7%	11%	25%	15%	4%	9%	24%	10%

Table 12. Flat Tax 2005$ U.S. Billions, Nordhaus SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$ 55.5	$ 7.1	$ 2.3		$ 2.3	$ 11.0	$ 4.3		$ 5.3	$ 5.7	$ 0.6	$ 0.8	$ 0.6	$ 0.4	$ 1.0	$ 1.1	$ 2.3	$ 1.5	$ 2.2	$ 16.8	$ -	$ 0.5	
1981	$ 54.0	$ 7.0	$ 2.4		$ 2.2	$ 11.0	$ 4.3		$ 5.1	$ 5.2	$ 0.6	$ 0.7	$ 0.6	$ 0.4	$ 0.8	$ 1.0	$ 2.4	$ 1.6	$ 2.0	$ 16.7	$ -	$ 0.5	
1982	$ 51.3	$ 6.7	$ 2.6		$ 2.1	$ 10.5	$ 4.1		$ 4.9	$ 4.9	$ 0.6	$ 0.6	$ 0.5	$ 0.3	$ 0.7	$ 1.1	$ 2.4	$ 1.5	$ 2.0	$ 17.5	$ -	$ 0.5	
1983	$ 51.0	$ 6.7	$ 2.6		$ 2.0	$ 10.1	$ 4.0		$ 4.8	$ 4.8	$ 0.6	$ 0.6	$ 0.5	$ 0.3	$ 0.7	$ 1.1	$ 2.5	$ 1.3	$ 1.9	$ 18.5	$ -	$ 0.5	
1984	$ 53.7	$ 6.6	$ 2.4		$ 2.1	$ 10.9	$ 4.1		$ 5.0	$ 4.6	$ 0.6	$ 0.6	$ 0.5	$ 0.4	$ 0.7	$ 1.2	$ 2.7	$ 1.4	$ 2.1	$ 20.1	$ -	$ 0.5	
1985	$ 53.6	$ 6.9	$ 2.4		$ 2.2	$ 10.8	$ 4.3		$ 5.2	$ 4.6	$ 0.6	$ 0.7	$ 0.5	$ 0.4	$ 0.7	$ 1.1	$ 2.8	$ 1.4	$ 2.2	$ 21.6	$ -	$ 0.5	
1986	$ 53.7	$ 6.9	$ 2.3		$ 2.3	$ 10.2	$ 4.3		$ 5.0	$ 4.2	$ 0.6	$ 0.8	$ 0.6	$ 0.4	$ 0.8	$ 1.2	$ 2.7	$ 1.4	$ 2.5	$ 22.9	$ -	$ 0.5	
1987	$ 55.5	$ 7.1	$ 2.3		$ 2.3	$ 10.4	$ 4.6		$ 5.2	$ 4.1	$ 0.6	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.3	$ 2.9	$ 1.4	$ 2.5	$ 24.5	$ -	$ 0.5	
1988	$ 58.0	$ 7.0	$ 2.4		$ 2.4	$ 11.2	$ 4.6		$ 5.6	$ 4.0	$ 0.6	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.3	$ 2.9	$ 1.3	$ 2.6	$ 26.1	$ -	$ 0.5	
1989	$ 59.0	$ 7.1	$ 2.6		$ 2.4	$ 11.5	$ 4.8		$ 5.7	$ 4.2	$ 0.6	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.3	$ 3.0	$ 1.4	$ 2.6	$ 26.5	$ -	$ 0.6	
1990	$ 58.6	$ 7.0	$ 2.6		$ 2.5	$ 12.2	$ 4.8		$ 5.5	$ 4.3	$ 0.6	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.2	$ 3.1	$ 1.4	$ 2.8	$ 26.4	$ -	$ 0.5	
1991	$ 58.1	$ 7.1	$ 2.8		$ 2.5	$ 12.4	$ 4.8	$ 10.8	$ 5.4	$ 4.6	$ 0.7	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.3	$ 3.1	$ 1.5	$ 2.9	$ 27.6	$ -	$ 0.6	
1992	$ 59.2	$ 6.7	$ 2.8	$ 23.5	$ 2.5	$ 12.5	$ 4.8	$ 10.4	$ 5.6	$ 4.4	$ 0.7	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.3	$ 3.2	$ 1.4	$ 2.8	$ 28.5	$ -	$ 0.6	
1993	$ 60.3	$ 6.8	$ 2.7	$ 21.7	$ 2.6	$ 12.4	$ 4.8	$ 10.4	$ 5.6	$ 4.3	$ 0.7	$ 0.7	$ 0.6	$ 0.4	$ 0.7	$ 1.4	$ 3.3	$ 1.4	$ 3.0	$ 29.8	$ -	$ 0.6	$ 1.4
1994	$ 61.2	$ 6.7	$ 2.8	$ 19.6	$ 2.6	$ 13.0	$ 4.7	$ 10.2	$ 5.8	$ 4.2	$ 0.7	$ 0.8	$ 0.7	$ 0.4	$ 0.8	$ 1.4	$ 3.3	$ 1.6	$ 3.1	$ 32.0	$ -	$ 0.6	$ 1.3
1995	$ 61.9	$ 6.5	$ 2.8	$ 18.6	$ 2.6	$ 13.0	$ 5.0	$ 10.4	$ 5.9	$ 4.3	$ 0.7	$ 0.8	$ 0.6	$ 0.4	$ 0.7	$ 1.4	$ 3.4	$ 1.7	$ 3.4	$ 33.2	$ -	$ 0.6	$ 1.3
1996	$ 64.0	$ 6.8	$ 2.8	$ 17.5	$ 2.7	$ 13.2	$ 4.9	$ 10.4	$ 6.0	$ 4.5	$ 0.8	$ 0.8	$ 0.6	$ 0.5	$ 0.8	$ 1.5	$ 3.5	$ 1.7	$ 3.6	$ 35.0	$ -	$ 0.7	$ 1.4
1997	$ 64.9	$ 6.6	$ 3.1	$ 16.2	$ 2.8	$ 13.5	$ 4.9	$ 10.3	$ 6.3	$ 4.5	$ 0.7	$ 0.9	$ 0.6	$ 0.5	$ 0.8	$ 1.5	$ 3.9	$ 1.7	$ 3.8	$ 33.9	$ -	$ 0.7	$ 1.2
1998	$ 65.3	$ 6.5	$ 3.2	$ 16.1	$ 2.8	$ 12.9	$ 5.1	$ 10.1	$ 6.4	$ 4.8	$ 0.8	$ 0.7	$ 0.6	$ 0.5	$ 0.8	$ 1.6	$ 3.9	$ 1.8	$ 3.8	$ 33.9	$ -	$ 0.7	$ 1.1
1999	$ 66.0	$ 6.5	$ 3.5	$ 17.0	$ 2.7	$ 13.4	$ 5.1	$ 9.8	$ 6.6	$ 4.7	$ 0.8	$ 0.7	$ 0.6	$ 0.5	$ 0.8	$ 1.6	$ 4.1	$ 1.7	$ 3.9	$ 34.1	$ -	$ 0.7	$ 1.0
2000	$ 68.2	$ 6.5	$ 3.7	$ 17.4	$ 2.9	$ 14.0	$ 5.2	$ 9.9	$ 6.7	$ 4.7	$ 0.7	$ 0.6	$ 0.6	$ 0.5	$ 0.7	$ 1.6	$ 4.1	$ 1.7	$ 4.0	$ 36.8	$ -	$ 0.7	$ 1.1
2001	$ 66.9	$ 6.7	$ 3.7	$ 16.8	$ 3.0	$ 13.9	$ 5.2	$ 10.2	$ 6.5	$ 4.7	$ 0.8	$ 0.7	$ 0.6	$ 0.5	$ 0.7	$ 1.5	$ 4.3	$ 1.8	$ 4.1	$ 37.5	$ -	$ 0.7	$ 1.1
2002	$ 67.4	$ 6.5	$ 3.9	$ 17.5	$ 3.0	$ 14.0	$ 5.3	$ 9.9	$ 6.6	$ 4.7	$ 0.8	$ 0.6	$ 0.6	$ 0.5	$ 0.7	$ 1.4	$ 4.4	$ 1.7	$ 4.0	$ 39.8	$ -	$ 0.6	$ 1.1
2003	$ 68.1	$ 6.7	$ 4.0	$ 18.0	$ 3.0	$ 14.5	$ 5.5	$ 9.9	$ 6.9	$ 4.7	$ 0.9	$ 0.7	$ 0.8	$ 0.5	$ 0.7	$ 1.6	$ 4.4	$ 1.8	$ 4.0	$ 46.1	$ -	$ 0.7	$ 1.1
2004	$ 69.5	$ 6.8	$ 4.3	$ 18.6	$ 3.1	$ 14.6	$ 5.5	$ 9.9	$ 7.1	$ 4.8	$ 0.9	$ 0.7	$ 0.7	$ 0.6	$ 0.7	$ 1.6	$ 4.5	$ 1.8	$ 4.1	$ 53.5	$ -	$ 0.6	$ 1.1
2005	$ 69.8	$ 6.8	$ 4.5	$ 18.5	$ 2.9	$ 14.4	$ 5.5	$ 9.7	$ 7.1	$ 4.8	$ 0.9	$ 0.6	$ 0.6	$ 0.5	$ 0.7	$ 1.8	$ 4.8	$ 1.8	$ 4.3	$ 59.5	$ -	$ 0.7	$ 1.2
2006	$ 68.9	$ 6.8	$ 4.4	$ 19.0	$ 2.9	$ 14.4	$ 5.4	$ 9.7	$ 6.9	$ 4.8	$ 0.9	$ 0.7	$ 0.7	$ 0.5	$ 0.7	$ 1.8	$ 4.8	$ 1.7	$ 4.5	$ 64.8	$ -	$ 0.7	$ 1.2
2007	$ 70.1	$ 6.6	$ 4.5	$ 18.4	$ 2.7	$ 14.6	$ 5.3	$ 9.4	$ 6.9	$ 4.9	$ 0.8	$ 0.6	$ 0.7	$ 0.5	$ 0.7	$ 2.0	$ 5.0	$ 1.7	$ 4.7	$ 68.7	$ -	$ 0.7	$ 1.2
2008	$ 67.9	$ 6.6	$ 4.1	$ 18.9	$ 2.7	$ 14.1	$ 5.2	$ 9.5	$ 6.7	$ 4.9	$ 0.8	$ 0.6	$ 0.6	$ 0.5	$ 0.6	$ 2.0	$ 5.0	$ 1.8	$ 5.0	$ 71.7	$ -	$ 0.7	$ 1.2
2009	$ 63.1	$ 6.0	$ 3.8	$ 17.2	$ 2.6	$ 12.9	$ 4.7	$ 8.8	$ 6.3	$ 4.5	$ 0.8	$ 0.6	$ 0.6	$ 0.5	$ 0.6	$ 2.0	$ 5.1	$ 1.6	$ 4.7	$ 79.3	$ -	$ 0.7	$ 1.1
2010	$ 65.5	$ 6.2	$ 3.6	$ 19.3	$ 2.7	$ 13.7	$ 4.8	$ 9.3	$ 6.3	$ 4.5	$ 0.8	$ 0.6	$ 0.7	$ 0.5	$ 0.7	$ 2.0	$ 4.9	$ 1.6	$ 5.2	$ 86.6	$ -	$ 0.8	$ 1.1

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44	World
1980	$ 0.6	$ 1.0	$ 3.4	$ 1.0	$ 1.4	$ 0.6	$ 1.5	$ 0.4	$ 0.4	$ 0.3	$ 2.8	$ 0.2	$ 0.8	$ 5.0	$ 0.3	$ 0.2	$ 2.1	$ 2.7	$ 0.5	$ 0.8	$ 1.1	$ 148.4	$ 214.4
1981	$ 0.6	$ 1.0	$ 3.9	$ 1.1	$ 1.3	$ 0.4	$ 1.6	$ 0.3	$ 0.3	$ 0.3	$ 3.1	$ 0.2	$ 0.7	$ 4.5	$ 0.2	$ 0.2	$ 2.0	$ 3.0	$ 0.5	$ 0.7	$ 1.2	$ 145.7	$ 211.7
1982	$ 0.6	$ 1.0	$ 4.1	$ 1.1	$ 1.6	$ 0.4	$ 1.6	$ 0.3	$ 0.3	$ 0.3	$ 3.3	$ 0.2	$ 0.7	$ 4.5	$ 0.3	$ 0.2	$ 1.9	$ 3.2	$ 0.4	$ 0.9	$ 1.2	$ 142.9	$ 210.4
1983	$ 0.6	$ 0.9	$ 4.3	$ 1.1	$ 1.8	$ 0.5	$ 1.7	$ 0.3	$ 0.3	$ 0.4	$ 3.0	$ 0.2	$ 0.6	$ 4.5	$ 0.3	$ 0.1	$ 1.9	$ 3.2	$ 0.5	$ 0.9	$ 1.1	$ 143.3	$ 212.2
1984	$ 0.6	$ 1.0	$ 4.9	$ 1.1	$ 1.8	$ 0.5	$ 1.9	$ 0.3	$ 0.3	$ 0.5	$ 3.2	$ 0.3	$ 0.7	$ 4.8	$ 0.3	$ 0.2	$ 2.1	$ 3.4	$ 0.5	$ 1.0	$ 1.1	$ 150.7	$ 222.2
1985	$ 0.7	$ 1.0	$ 5.2	$ 1.2	$ 1.9	$ 0.6	$ 2.0	$ 0.3	$ 0.3	$ 0.5	$ 3.3	$ 0.3	$ 0.7	$ 4.9	$ 0.3	$ 0.2	$ 2.1	$ 3.5	$ 0.5	$ 1.1	$ 1.1	$ 154.0	$ 227.3
1986	$ 0.7	$ 0.9	$ 5.5	$ 1.3	$ 1.9	$ 0.7	$ 2.1	$ 0.3	$ 0.4	$ 0.6	$ 3.1	$ 0.3	$ 0.7	$ 5.0	$ 0.4	$ 0.2	$ 2.2	$ 3.6	$ 0.5	$ 1.2	$ 1.2	$ 156.0	$ 232.0
1987	$ 0.8	$ 0.9	$ 5.7	$ 1.4	$ 2.0	$ 0.6	$ 2.2	$ 0.4	$ 0.4	$ 0.5	$ 3.2	$ 0.3	$ 0.7	$ 5.1	$ 0.4	$ 0.2	$ 2.2	$ 3.7	$ 0.5	$ 1.3	$ 1.2	$ 161.3	$ 238.4
1988	$ 0.9	$ 0.8	$ 6.1	$ 1.5	$ 2.1	$ 0.7	$ 2.4	$ 0.4	$ 0.4	$ 0.5	$ 3.2	$ 0.3	$ 0.7	$ 5.0	$ 0.4	$ 0.2	$ 2.3	$ 3.7	$ 0.5	$ 1.2	$ 1.2	$ 167.4	$ 246.3
1989	$ 0.9	$ 0.8	$ 6.4	$ 1.6	$ 2.3	$ 0.7	$ 2.6	$ 0.5	$ 0.4	$ 0.6	$ 3.4	$ 0.3	$ 0.9	$ 4.8	$ 0.5	$ 0.2	$ 2.3	$ 3.5	$ 0.5	$ 1.4	$ 1.3	$ 171.6	$ 249.8
1990	$ 0.9	$ 0.8	$ 6.7	$ 1.8	$ 2.4	$ 0.8	$ 2.8	$ 0.3	$ 0.5	$ 0.8	$ 3.5	$ 0.3	$ 1.0	$ 3.9	$ 0.5	$ 0.2	$ 2.4	$ 3.5	$ 0.5	$ 1.5	$ 1.3	$ 172.2	$ 251.3
1991	$ 0.9	$ 0.8	$ 7.2	$ 2.0	$ 2.6	$ 0.5	$ 3.1	$ 0.5	$ 0.5	$ 0.8	$ 3.6	$ 0.3	$ 1.0	$ 3.8	$ 0.5	$ 0.3	$ 2.6	$ 3.6	$ 0.5	$ 1.6	$ 1.3	$ 186.7	$ 250.2
1992	$ 0.9	$ 0.7	$ 7.7	$ 2.1	$ 2.7	$ 0.7	$ 3.4	$ 0.3	$ 0.4	$ 0.8	$ 3.6	$ 0.3	$ 1.1	$ 3.8	$ 0.6	$ 0.3	$ 2.7	$ 3.7	$ 0.5	$ 1.6	$ 1.3	$ 212.8	$ 248.9
1993	$ 1.0	$ 0.7	$ 8.0	$ 2.3	$ 2.8	$ 0.8	$ 3.8	$ 0.4	$ 0.4	$ 0.9	$ 3.7	$ 0.3	$ 1.1	$ 3.9	$ 0.5	$ 0.3	$ 2.7	$ 3.7	$ 0.5	$ 1.7	$ 1.3	$ 216.6	$ 250.7
1994	$ 1.0	$ 0.7	$ 8.6	$ 2.4	$ 2.9	$ 0.9	$ 4.1	$ 0.4	$ 0.4	$ 1.0	$ 3.9	$ 0.4	$ 1.1	$ 3.7	$ 0.5	$ 0.3	$ 2.8	$ 4.0	$ 0.5	$ 1.6	$ 1.4	$ 220.1	$ 252.8
1995	$ 1.0	$ 0.7	$ 10.2	$ 2.5	$ 3.1	$ 0.9	$ 4.4	$ 0.5	$ 0.5	$ 1.0	$ 3.7	$ 0.4	$ 1.2	$ 3.6	$ 0.6	$ 0.4	$ 2.7	$ 4.0	$ 0.5	$ 1.8	$ 1.4	$ 224.2	$ 257.8
1996	$ 1.0	$ 0.7	$ 9.5	$ 2.8	$ 3.1	$ 0.9	$ 4.6	$ 0.6	$ 0.5	$ 1.2	$ 3.9	$ 0.4	$ 1.2	$ 4.0	$ 0.6	$ 0.4	$ 2.9	$ 4.1	$ 0.5	$ 2.0	$ 1.6	$ 229.7	$ 263.8
1997	$ 1.1	$ 0.7	$ 10.0	$ 2.9	$ 3.4	$ 0.8	$ 5.0	$ 0.6	$ 0.5	$ 1.2	$ 4.1	$ 0.4	$ 1.1	$ 3.9	$ 0.6	$ 0.4	$ 3.0	$ 4.5	$ 0.5	$ 2.1	$ 1.6	$ 231.4	$ 265.5
1998	$ 1.1	$ 0.7	$ 10.4	$ 2.8	$ 3.4	$ 0.8	$ 4.4	$ 0.7	$ 0.5	$ 1.2	$ 4.3	$ 0.4	$ 1.0	$ 3.7	$ 0.7	$ 0.4	$ 3.0	$ 4.2	$ 0.5	$ 2.1	$ 1.7	$ 231.4	$ 265.9
1999	$ 1.1	$ 0.7	$ 11.1	$ 3.1	$ 3.7	$ 0.9	$ 4.9	$ 0.7	$ 0.5	$ 1.2	$ 4.2	$ 0.4	$ 1.0	$ 3.8	$ 0.7	$ 0.4	$ 3.1	$ 4.4	$ 0.5	$ 2.1	$ 1.5	$ 235.6	$ 270.7
2000	$ 1.2	$ 0.6	$ 11.5	$ 3.1	$ 3.7	$ 0.9	$ 5.1	$ 0.7	$ 0.5	$ 1.4	$ 4.5	$ 0.4	$ 0.9	$ 3.4	$ 0.7	$ 0.4	$ 3.4	$ 4.5	$ 0.5	$ 2.3	$ 1.6	$ 243.7	$ 279.6
2001	$ 1.2	$ 0.7	$ 11.8	$ 3.2	$ 3.9	$ 0.9	$ 5.3	$ 0.7	$ 0.5	$ 1.5	$ 4.4	$ 0.4	$ 1.1	$ 3.2	$ 0.7	$ 0.3	$ 3.5	$ 4.6	$ 0.5	$ 2.1	$ 1.7	$ 244.0	$ 280.7
2002	$ 1.2	$ 0.7	$ 11.7	$ 3.4	$ 4.2	$ 0.9	$ 5.4	$ 0.7	$ 0.6	$ 1.6	$ 4.4	$ 0.4	$ 1.1	$ 3.2	$ 0.8	$ 0.3	$ 3.6	$ 4.4	$ 0.5	$ 2.3	$ 1.7	$ 248.1	$ 285.9
2003	$ 1.2	$ 0.7	$ 11.9	$ 3.4	$ 4.5	$ 0.8	$ 5.6	$ 0.7	$ 0.5	$ 1.6	$ 4.5	$ 0.5	$ 1.1	$ 3.3	$ 0.7	$ 0.4	$ 4.0	$ 4.8	$ 0.5	$ 2.4	$ 1.6	$ 259.4	$ 298.8
2004	$ 1.2	$ 0.7	$ 13.0	$ 3.6	$ 4.7	$ 0.9	$ 5.7	$ 0.8	$ 0.6	$ 1.7	$ 4.4	$ 0.5	$ 1.1	$ 3.4	$ 0.7	$ 0.4	$ 4.5	$ 5.1	$ 0.5	$ 2.4	$ 1.7	$ 272.6	$ 313.6
2005	$ 1.2	$ 0.7	$ 13.7	$ 3.8	$ 5.2	$ 1.1	$ 5.7	$ 0.9	$ 0.7	$ 1.7	$ 4.6	$ 0.5	$ 1.2	$ 3.3	$ 0.8	$ 0.6	$ 4.7	$ 5.0	$ 0.5	$ 2.7	$ 1.7	$ 281.7	$ 324.2
2006	$ 1.2	$ 0.7	$ 14.9	$ 4.1	$ 5.6	$ 1.1	$ 5.6	$ 0.9	$ 0.6	$ 1.7	$ 4.9	$ 0.5	$ 1.2	$ 3.5	$ 0.7	$ 0.7	$ 4.7	$ 5.2	$ 0.5	$ 2.9	$ 1.8	$ 289.1	$ 332.8
2007	$ 1.3	$ 0.7	$ 15.9	$ 4.3	$ 5.7	$ 1.2	$ 5.9	$ 0.9	$ 0.6	$ 1.9	$ 5.2	$ 0.5	$ 1.2	$ 3.4	$ 0.7	$ 0.7	$ 4.6	$ 5.3	$ 0.5	$ 3.3	$ 1.8	$ 295.9	$ 340.4
2008	$ 1.2	$ 0.7	$ 16.9	$ 4.3	$ 6.0	$ 1.2	$ 6.1	$ 0.9	$ 0.7	$ 2.0	$ 5.3	$ 0.5	$ 1.2	$ 3.4	$ 0.7	$ 0.7	$ 4.9	$ 5.7	$ 0.5	$ 3.2	$ 1.9	$ 298.8	$ 344.8
2009	$ 1.2	$ 0.6	$ 19.1	$ 4.7	$ 6.5	$ 1.3	$ 6.1	$ 1.0	$ 0.7	$ 2.0	$ 4.9	$ 0.4	$ 0.9	$ 3.3	$ 0.7	$ 0.8	$ 5.1	$ 5.6	$ 0.5	$ 3.1	$ 1.8	$ 297.8	$ 342.3
2010	$ 1.1	$ 0.6	$ 19.9	$ 4.8	$ 6.6	$ 1.3	$ 6.8	$ 1.0	$ 0.7	$ 2.2	$ 5.0	$ 0.4	$ 0.9	$ 3.5	$ 0.6	$ 0.8	$ 5.5	$ 5.5	$ 0.5	$ 3.1	$ 1.9	$ 314.3	$ 361.2

Table 13. *fGDP$_{e+CO2}$,* Nordhaus SCC, 1980-2010.

Year	United Sta	United King	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	11%	8%	6%	33%	9%	7%	6%	12%	11%	7%	8%	6%	8%	6%	10%	15%	7%	9%	9%	50%	15%	11%
1981	10%	7%	6%	31%	9%	7%	5%	11%	11%	7%	7%	5%	8%	5%	8%	13%	7%	8%	8%	43%	12%	10%
1982	10%	6%	5%	26%	9%	6%	5%	10%	10%	6%	6%	5%	6%	5%	7%	13%	7%	7%	7%	37%	10%	9%
1983	8%	5%	5%	20%	8%	5%	4%	9%	9%	5%	5%	4%	5%	4%	5%	12%	6%	7%	7%	32%	9%	7%
1984	8%	5%	4%	20%	7%	5%	4%	9%	9%	5%	5%	3%	5%	4%	5%	11%	5%	6%	7%	27%	8%	7%
1985	7%	5%	4%	19%	6%	4%	4%	8%	8%	4%	4%	4%	5%	4%	5%	11%	5%	6%	6%	24%	7%	7%
1986	5%	4%	3%	14%	5%	4%	3%	9%	6%	4%	4%	3%	4%	4%	5%	8%	3%	5%	5%	20%	4%	6%
1987	5%	4%	3%	15%	5%	4%	3%	10%	7%	4%	4%	3%	4%	4%	5%	9%	4%	5%	5%	21%	4%	5%
1988	5%	4%	3%	14%	4%	4%	3%	9%	6%	4%	4%	3%	4%	4%	5%	8%	4%	5%	6%	18%	4%	6%
1989	5%	4%	3%	15%	4%	4%	3%	8%	7%	4%	4%	2%	4%	4%	5%	9%	4%	5%	6%	18%	5%	6%
1990	5%	4%	4%	13%	5%	4%	3%	8%	7%	4%	4%	3%	4%	4%	6%	10%	4%	5%	8%	22%	6%	6%
1991	5%	4%	4%	13%	4%	4%	3%	7%	7%	4%	4%	3%	4%	4%	6%	9%	4%	5%	6%	17%	5%	5%
1992	4%	4%	3%	16%	5%	4%	3%	6%	7%	4%	4%	2%	5%	5%	6%	8%	4%	5%	6%	22%	5%	5%
1993	4%	3%	3%	12%	4%	4%	3%	6%	6%	4%	4%	2%	5%	5%	4%	7%	3%	4%	5%	19%	5%	5%
1994	4%	3%	3%	13%	4%	4%	3%	5%	6%	4%	4%	2%	5%	4%	4%	7%	3%	4%	6%	12%	4%	5%
1995	4%	3%	3%	16%	5%	4%	3%	6%	6%	4%	4%	2%	5%	5%	4%	8%	3%	4%	5%	12%	4%	5%
1996	4%	3%	3%	12%	4%	4%	3%	4%	6%	4%	4%	3%	5%	5%	5%	8%	3%	5%	6%	11%	4%	5%
1997	4%	3%	3%	10%	4%	4%	3%	4%	5%	3%	4%	2%	4%	4%	4%	8%	3%	4%	5%	11%	4%	5%
1998	3%	2%	2%	9%	3%	3%	2%	3%	4%	3%	3%	2%	4%	4%	4%	6%	2%	4%	5%	9%	3%	4%
1999	3%	2%	3%	10%	3%	4%	2%	3%	5%	3%	3%	2%	4%	4%	4%	7%	3%	4%	6%	9%	3%	4%
2000	4%	2%	3%	10%	4%	4%	3%	3%	5%	3%	3%	2%	3%	2%	4%	9%	3%	4%	6%	10%	5%	5%
2001	4%	2%	3%	9%	4%	4%	2%	3%	5%	3%	3%	2%	3%	3%	4%	8%	3%	4%	5%	9%	4%	5%
2002	4%	2%	3%	9%	4%	3%	2%	3%	5%	3%	3%	2%	3%	3%	4%	9%	3%	4%	5%	9%	4%	4%
2003	4%	2%	3%	9%	4%	4%	3%	4%	6%	3%	4%	3%	4%	4%	5%	10%	3%	5%	6%	10%	4%	5%
2004	5%	3%	4%	11%	5%	4%	4%	4%	6%	4%	5%	3%	4%	4%	5%	12%	3%	6%	7%	12%	5%	6%
2005	5%	3%	5%	14%	6%	4%	4%	5%	7%	4%	5%	3%	5%	4%	5%	14%	4%	6%	8%	14%	6%	7%
2006	6%	4%	5%	15%	7%	4%	5%	5%	8%	4%	5%	4%	5%	5%	5%	14%	4%	7%	9%	14%	6%	7%
2007	6%	4%	5%	15%	6%	4%	5%	5%	8%	5%	6%	4%	5%	4%	5%	15%	4%	8%	9%	15%	6%	7%
2008	7%	5%	7%	18%	8%	5%	6%	7%	10%	6%	7%	5%	6%	5%	6%	17%	5%	10%	11%	20%	8%	9%
2009	5%	3%	5%	15%	6%	5%	5%	6%	6%	5%	5%	4%	5%	5%	5%	12%	3%	7%	8%	14%	5%	7%
2010	5%	4%	6%	17%	6%	5%	5%	6%	7%	5%	6%	4%	6%	6%	6%	12%	4%	9%	9%	15%	6%	7%

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	10%	7%	12%	13%	14%	23%	4%	12%	16%	6%	16%	7%	7%	9%	16%	5%	3%	10%	8%	5%	7%	18%	11%
1981	10%	5%	11%	12%	13%	20%	5%	11%	15%	8%	15%	7%	6%	10%	16%	5%	3%	9%	7%	4%	7%	14%	10%
1982	9%	5%	10%	12%	11%	17%	6%	9%	17%	7%	13%	6%	6%	9%	18%	5%	4%	10%	7%	4%	6%	12%	9%
1983	7%	4%	8%	11%	10%	15%	4%	8%	14%	8%	12%	5%	5%	9%	15%	5%	4%	10%	6%	4%	5%	12%	8%
1984	7%	4%	8%	11%	9%	16%	4%	8%	12%	8%	11%	5%	5%	8%	14%	5%	4%	9%	6%	4%	5%	10%	8%
1985	7%	4%	8%	10%	9%	15%	5%	7%	14%	8%	11%	5%	4%	7%	13%	4%	5%	9%	5%	3%	4%	10%	7%
1986	6%	2%	7%	8%	6%	11%	4%	5%	7%	5%	8%	3%	3%	5%	13%	3%	4%	5%	4%	3%	3%	6%	6%
1987	7%	3%	7%	9%	7%	13%	4%	6%	11%	7%	8%	4%	4%	6%	15%	3%	4%	6%	5%	4%	4%	8%	6%
1988	6%	3%	6%	8%	6%	12%	5%	6%	10%	4%	7%	3%	4%	4%	14%	3%	4%	5%	5%	3%	3%	6%	6%
1989	5%	3%	6%	8%	6%	14%	5%	6%	12%	5%	8%	4%	4%	5%	11%	3%	4%	6%	5%	3%	4%	7%	5%
1990	5%	4%	6%	10%	8%	15%	9%	6%	6%	6%	9%	4%	5%	6%	10%	3%	5%	6%	5%	4%	4%	8%	6%
1991	5%	3%	6%	10%	6%	13%	12%	6%	4%	5%	8%	4%	5%	5%	12%	3%	5%	6%	5%	3%	4%	6%	5%
1992	5%	3%	6%	9%	6%	12%	15%	6%	4%	5%	7%	4%	4%	5%	11%	3%	4%	5%	5%	4%	4%	7%	5%
1993	6%	3%	6%	8%	6%	11%	23%	6%	3%	4%	6%	3%	4%	5%	11%	3%	3%	5%	5%	3%	4%	5%	5%
1994	6%	3%	6%	8%	5%	11%	24%	5%	4%	5%	6%	3%	4%	4%	10%	3%	5%	5%	5%	3%	3%	6%	5%
1995	6%	3%	6%	8%	5%	12%	26%	6%	5%	7%	6%	3%	5%	4%	10%	3%	5%	5%	5%	4%	4%	7%	5%
1996	6%	3%	6%	8%	6%	13%	28%	6%	6%	7%	7%	3%	5%	4%	10%	3%	6%	6%	5%	4%	4%	7%	5%
1997	5%	3%	5%	8%	6%	11%	24%	6%	5%	6%	6%	3%	5%	4%	8%	3%	3%	5%	4%	3%	4%	5%	4%
1998	5%	3%	5%	7%	4%	8%	10%	5%	3%	5%	5%	3%	4%	3%	7%	2%	3%	3%	4%	3%	3%	4%	4%
1999	5%	3%	5%	7%	6%	10%	9%	6%	7%	7%	6%	3%	4%	4%	6%	2%	3%	5%	4%	3%	3%	6%	4%
2000	5%	4%	5%	8%	9%	13%	14%	7%	8%	10%	7%	4%	4%	5%	6%	3%	3%	7%	5%	3%	4%	7%	4%
2001	5%	3%	5%	7%	8%	11%	14%	6%	7%	9%	7%	4%	3%	5%	6%	3%	3%	6%	4%	3%	4%	7%	4%
2002	5%	3%	5%	7%	8%	11%	16%	6%	8%	9%	7%	3%	4%	5%	6%	3%	3%	7%	4%	3%	4%	8%	4%
2003	8%	3%	6%	7%	9%	12%	27%	7%	8%	9%	7%	4%	4%	6%	7%	3%	3%	7%	5%	3%	4%	9%	5%
2004	9%	4%	7%	9%	10%	16%	26%	6%	10%	11%	9%	5%	5%	6%	7%	4%	4%	9%	6%	3%	5%	9%	5%
2005	10%	5%	9%	10%	13%	25%	34%	7%	14%	14%	11%	7%	6%	7%	8%	5%	6%	12%	6%	4%	5%	9%	6%
2006	11%	6%	10%	11%	13%	29%	30%	8%	17%	15%	12%	7%	6%	6%	8%	5%	6%	14%	7%	4%	6%	13%	7%
2007	10%	6%	10%	11%	13%	31%	34%	9%	18%	15%	13%	8%	6%	6%	8%	5%	6%	16%	9%	3%	7%	14%	7%
2008	13%	7%	13%	13%	16%	36%	48%	10%	23%	20%	16%	10%	8%	7%	10%	7%	7%	21%	10%	4%	9%	20%	9%
2009	11%	5%	11%	10%	11%	27%	39%	7%	17%	15%	12%	6%	6%	4%	8%	5%	5%	15%	8%	3%	7%	14%	7%
2010	11%	6%	12%	12%	13%	32%	56%	9%	22%	18%	14%	7%	7%	5%	9%	6%	8%	19%	8%	4%	7%	20%	7%

Table 14. Flat Tax 2005$ U.S. Billions, Stern SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World 44
1980	$605.5	$77.8	$24.7		$25.5	$120.1	$47.1		$58.0	$62.0	$7.1	$8.2	$7.0	$4.3	$10.4	$11.8	$25.2	$16.8	$23.5	$183.6	$0.0	$5.0		$6.6	$10.7	$36.9	$10.9	$14.8	$6.6	$16.7	$4.0	$4.1	$3.3	$30.5	$2.5	$8.8	$54.4	$3.0	$1.8	$22.4	$29.8	$6.0	$8.7	$12.0	$1,618.1
1981	$589.2	$76.0	$26.0		$24.5	$119.8	$46.4		$56.1	$56.3	$6.9	$7.6	$6.6	$4.0	$9.2	$11.4	$25.9	$17.0	$22.2	$182.6	$0.0	$5.2		$6.7	$10.5	$42.8	$11.7	$13.7	$4.8	$17.5	$3.0	$3.4	$3.5	$33.8	$2.5	$7.5	$49.0	$2.7	$1.8	$22.2	$32.3	$5.1	$8.0	$12.9	$1,588.0
1982	$559.2	$72.5	$28.0		$23.0	$114.1	$45.0		$53.7	$53.7	$6.5	$7.0	$5.9	$3.6	$8.0	$12.2	$26.4	$16.0	$21.9	$191.1	$0.0	$5.3		$6.5	$10.5	$44.3	$11.7	$16.9	$4.7	$17.6	$2.9	$3.5	$3.7	$35.8	$2.6	$7.1	$49.5	$3.5	$1.8	$21.0	$34.6	$4.7	$9.3	$12.9	$1,558.3
1983	$556.4	$73.2	$28.6		$22.1	$109.9	$43.9		$52.1	$51.8	$6.5	$6.5	$5.6	$3.7	$7.5	$12.5	$27.7	$14.2	$20.8	$202.0	$0.0	$5.4		$6.9	$10.3	$46.6	$11.9	$19.8	$5.4	$18.8	$3.2	$3.5	$4.5	$33.1	$2.7	$7.0	$49.6	$3.6	$1.6	$21.1	$35.1	$5.0	$10.0	$12.2	$1,562.4
1984	$585.7	$71.5	$26.7		$23.3	$118.6	$44.5		$55.0	$50.1	$6.9	$6.9	$5.4	$3.9	$7.3	$13.2	$29.8	$14.7	$22.9	$218.7	$0.0	$5.8		$7.1	$10.4	$53.5	$12.4	$19.2	$5.4	$20.7	$3.4	$3.3	$5.3	$35.4	$2.9	$7.4	$51.8	$3.4	$2.0	$23.3	$37.6	$5.0	$10.4	$12.2	$1,643.1
1985	$583.9	$74.7	$26.0		$24.2	$117.4	$46.4		$56.3	$50.3	$7.0	$8.0	$5.9	$4.3	$7.8	$12.4	$30.1	$14.8	$24.4	$235.6	$0.0	$5.7		$7.7	$10.6	$56.7	$12.9	$20.3	$6.0	$21.8	$3.3	$3.5	$5.6	$35.6	$2.9	$7.7	$53.5	$3.7	$1.8	$22.7	$38.3	$5.2	$11.8	$12.2	$1,679.2
1986	$584.9	$75.5	$25.3		$24.8	$111.3	$47.1		$54.2	$46.0	$6.8	$8.2	$6.4	$4.6	$8.3	$13.1	$29.7	$15.1	$27.0	$249.9	$0.0	$5.7		$8.1	$9.8	$60.1	$14.0	$21.0	$7.1	$22.9	$3.8	$3.8	$6.2	$33.9	$3.2	$7.6	$54.2	$4.0	$1.8	$24.1	$39.1	$5.6	$13.4	$13.2	$1,700.8
1987	$604.9	$76.9	$25.5		$25.4	$112.9	$49.7		$56.4	$45.1	$7.0	$8.1	$6.5	$4.4	$8.1	$14.0	$31.8	$15.0	$27.8	$266.6	$0.0	$5.4		$8.8	$9.8	$61.7	$14.9	$22.1	$6.8	$23.5	$4.3	$3.9	$5.9	$35.2	$3.2	$7.7	$55.9	$4.1	$1.8	$24.2	$40.0	$5.4	$13.9	$13.4	$1,758.0
1988	$632.7	$76.0	$25.6		$25.8	$121.7	$50.3		$60.6	$43.2	$6.7	$7.5	$6.2	$4.3	$7.8	$14.2	$31.2	$14.6	$28.1	$284.0	$0.0	$6.0		$9.5	$9.2	$66.2	$15.9	$22.9	$7.6	$26.3	$4.9	$4.4	$6.0	$35.1	$3.5	$8.1	$54.5	$4.3	$1.9	$25.4	$40.5	$5.4	$13.1	$13.2	$1,824.5
1989	$643.1	$77.6	$28.1		$25.8	$125.4	$52.3		$62.5	$46.3	$6.7	$7.5	$6.6	$4.6	$7.4	$14.3	$33.2	$15.3	$28.8	$288.5	$0.0	$6.0		$9.9	$9.0	$70.2	$17.8	$24.8	$8.1	$27.8	$5.5	$4.7	$6.7	$36.9	$3.5	$9.7	$52.3	$5.5	$1.9	$25.2	$37.8	$5.3	$15.2	$13.7	$1,871.3
1990	$639.1	$76.3	$28.4		$26.8	$132.7	$52.7		$59.7	$46.6	$7.1	$7.2	$6.7	$4.4	$7.2	$13.0	$33.9	$15.6	$30.1	$287.7	$0.0	$5.3		$10.3	$8.4	$73.4	$19.8	$25.6	$8.8	$30.7	$3.5	$5.4	$8.3	$38.3	$3.6	$10.5	$42.3	$5.6	$2.4	$26.4	$37.8	$5.5	$16.4	$13.9	$1,877.4
1991	$633.6	$77.3	$30.0		$27.7	$135.2	$52.8	$117.8	$59.1	$49.8	$7.6	$8.1	$6.5	$4.1	$7.2	$13.8	$34.0	$16.2	$31.2	$300.4	$0.0	$6.1		$10.3	$8.3	$78.7	$21.6	$28.8	$5.5	$34.2	$5.4	$5.3	$8.5	$39.3	$3.7	$11.2	$41.8	$5.6	$2.8	$28.7	$39.4	$5.7	$17.4	$14.1	$2,034.9
1992	$645.8	$73.2	$30.7	$256.1	$26.9	$136.1	$52.6	$113.5	$61.5	$48.4	$7.2	$7.8	$6.3	$4.5	$7.5	$13.9	$34.9	$15.6	$30.1	$310.5	$0.0	$6.8		$10.1	$7.7	$83.7	$22.9	$29.8	$7.3	$37.2	$3.0	$4.6	$9.2	$39.7	$3.8	$11.9	$41.6	$6.0	$3.2	$29.9	$40.6	$5.8	$17.5	$14.2	$2,319.5
1993	$657.8	$73.9	$29.2	$236.2	$28.2	$134.9	$52.3	$113.2	$61.6	$46.7	$7.4	$7.5	$6.6	$4.3	$7.7	$15.2	$35.9	$15.8	$32.7	$325.3	$0.0	$7.0	$14.8	$10.6	$7.4	$87.7	$25.4	$30.2	$8.4	$41.9	$3.9	$4.7	$9.8	$40.2	$3.8	$12.3	$42.9	$5.8	$3.8	$29.5	$40.4	$5.5	$18.3	$14.4	$2,361.2
1994	$667.1	$72.6	$30.0	$214.1	$28.2	$141.8	$51.2	$111.0	$62.8	$45.8	$7.3	$8.2	$7.4	$4.6	$8.2	$14.8	$35.7	$17.2	$34.1	$349.2	$0.0	$6.8	$14.0	$10.7	$7.4	$93.9	$26.6	$31.8	$9.8	$44.6	$4.7	$4.8	$10.9	$42.7	$4.0	$12.1	$40.8	$5.9	$3.8	$30.4	$44.0	$5.4	$17.7	$15.1	$2,399.3
1995	$674.4	$71.0	$30.9	$203.2	$28.2	$141.5	$54.7	$112.9	$64.5	$47.2	$7.5	$8.8	$6.3	$4.8	$8.1	$15.2	$36.7	$18.0	$36.7	$361.6	$0.0	$6.8	$14.1	$10.9	$7.3	$111.5	$27.2	$33.3	$9.8	$48.4	$5.1	$5.0	$11.3	$40.7	$3.9	$12.7	$39.1	$6.4	$3.8	$29.8	$44.1	$5.6	$19.4	$15.8	$2,444.4
1996	$698.0	$74.7	$30.1	$191.0	$28.9	$143.9	$53.7	$112.9	$65.9	$49.5	$8.2	$9.2	$6.7	$5.1	$8.5	$16.5	$38.3	$18.3	$38.9	$381.1	$0.0	$7.2	$14.8	$11.0	$7.5	$103.3	$30.2	$33.3	$9.8	$50.4	$6.3	$5.3	$12.9	$42.2	$3.9	$12.9	$43.7	$6.1	$3.9	$31.7	$44.7	$5.7	$21.4	$16.9	$2,504.4
1997	$707.1	$71.9	$33.6	$176.9	$30.2	$146.8	$53.8	$112.5	$69.1	$48.7	$8.2	$9.5	$6.8	$5.3	$8.3	$16.5	$42.0	$18.7	$41.3	$370.0	$0.0	$8.0	$12.6	$11.6	$7.4	$108.5	$31.3	$36.9	$8.9	$54.1	$6.7	$5.5	$13.0	$44.3	$4.3	$11.7	$42.7	$6.6	$4.1	$32.3	$48.7	$5.6	$23.1	$17.1	$2,522.2
1998	$712.2	$71.2	$34.9	$175.5	$30.1	$141.1	$55.9	$110.3	$69.6	$51.9	$8.5	$7.6	$6.4	$5.3	$8.4	$17.3	$42.8	$19.5	$41.1	$369.7	$0.0	$8.2	$12.0	$12.3	$7.3	$113.3	$30.5	$37.4	$9.2	$48.3	$7.2	$5.3	$13.0	$47.1	$4.2	$11.3	$39.8	$7.1	$4.2	$32.7	$46.3	$5.8	$23.3	$18.0	$2,523.2
1999	$719.9	$70.6	$37.9	$185.0	$29.9	$146.6	$55.9	$106.4	$71.8	$51.1	$8.2	$7.3	$6.1	$5.6	$8.2	$17.8	$45.1	$18.4	$42.6	$371.8	$0.0	$7.3	$10.9	$12.1	$7.4	$120.6	$33.6	$40.3	$9.6	$53.7	$7.2	$5.0	$13.6	$46.1	$4.5	$10.8	$41.4	$8.0	$4.0	$33.5	$47.8	$5.9	$23.0	$16.3	$2,568.5
2000	$743.5	$71.0	$40.0	$190.0	$31.2	$152.3	$56.8	$108.4	$72.7	$50.9	$8.1	$6.9	$6.4	$5.2	$7.7	$17.5	$45.2	$18.9	$43.7	$401.3	$0.0	$7.4	$12.0	$12.8	$7.0	$125.6	$33.9	$40.8	$9.3	$55.6	$7.5	$5.3	$15.0	$48.5	$4.5	$10.2	$37.1	$8.1	$4.4	$36.8	$48.9	$5.8	$25.6	$17.0	$2,657.2
2001	$729.6	$72.6	$40.6	$182.9	$33.2	$151.3	$56.4	$111.3	$71.2	$51.4	$8.6	$7.1	$6.7	$5.3	$7.6	$16.3	$46.9	$19.3	$44.2	$409.1	$0.0	$7.2	$12.1	$13.1	$7.3	$128.9	$34.6	$42.4	$9.8	$57.3	$7.3	$5.5	$15.9	$48.1	$4.8	$11.6	$35.0	$7.7	$3.5	$38.2	$49.8	$5.8	$23.4	$18.9	$2,659.9
2002	$735.2	$71.2	$42.8	$190.3	$32.2	$152.1	$57.3	$108.4	$72.0	$50.9	$9.0	$6.7	$6.8	$5.4	$7.2	$15.4	$47.5	$18.3	$43.9	$433.9	$0.0	$7.0	$11.7	$13.0	$7.3	$127.8	$36.6	$46.3	$10.1	$59.3	$7.1	$6.1	$17.7	$48.1	$4.8	$11.5	$34.9	$8.4	$3.7	$39.5	$48.2	$5.6	$24.7	$18.6	$2,704.6
2003	$742.1	$72.6	$43.9	$196.8	$32.7	$158.4	$59.9	$107.9	$75.7	$51.8	$9.4	$7.8	$8.5	$5.8	$7.7	$17.0	$47.5	$19.4	$44.0	$502.1	$0.0	$7.2	$11.8	$13.5	$7.6	$129.6	$36.9	$49.2	$9.1	$60.9	$8.0	$5.9	$17.8	$49.2	$5.0	$11.8	$36.1	$7.8	$4.1	$44.0	$52.3	$5.7	$26.1	$16.9	$2,827.4
2004	$757.5	$74.0	$46.5	$202.8	$33.5	$159.3	$59.5	$107.6	$77.5	$52.1	$9.6	$7.1	$7.8	$6.1	$7.7	$17.9	$49.5	$19.9	$45.1	$582.8	$0.0	$7.1	$11.4	$13.3	$7.4	$142.1	$39.7	$51.7	$9.9	$61.7	$8.6	$6.6	$18.3	$47.9	$5.1	$11.7	$37.0	$8.0	$4.9	$49.3	$56.1	$5.8	$26.7	$18.2	$2,972.3
2005	$760.6	$73.9	$48.6	$201.3	$31.8	$157.4	$59.8	$105.7	$77.3	$52.5	$9.9	$6.6	$6.6	$5.3	$7.3	$19.3	$51.9	$19.5	$47.0	$648.7	$0.0	$7.6	$12.9	$13.4	$7.5	$149.8	$41.4	$57.2	$12.0	$62.6	$9.6	$7.2	$18.7	$50.4	$5.2	$13.4	$36.5	$8.4	$7.0	$51.0	$54.8	$5.8	$29.3	$18.5	$3,071.0
2006	$751.0	$74.2	$47.8	$207.4	$31.5	$157.2	$59.3	$106.2	$75.7	$52.0	$9.5	$7.6	$7.7	$5.2	$7.3	$19.9	$52.7	$18.5	$48.7	$706.9	$0.0	$7.7	$13.1	$13.4	$7.5	$162.4	$44.4	$60.5	$11.6	$61.4	$9.7	$6.6	$19.1	$53.1	$5.1	$12.9	$37.9	$7.6	$7.4	$51.0	$56.3	$5.8	$31.8	$19.1	$3,151.7
2007	$763.8	$72.3	$49.1	$200.1	$29.6	$159.0	$58.3	$103.0	$74.7	$53.8	$9.0	$7.1	$7.6	$5.3	$7.2	$21.4	$54.0	$18.1	$50.9	$749.1	$0.0	$7.7	$13.1	$13.9	$7.2	$173.2	$47.2	$62.0	$12.6	$63.8	$9.4	$6.8	$20.7	$56.3	$5.0	$12.6	$37.5	$7.5	$7.6	$49.8	$57.9	$5.5	$35.5	$19.4	$3,225.5
2008	$740.5	$71.5	$45.0	$206.5	$29.1	$154.2	$57.0	$103.0	$72.8	$53.4	$8.9	$6.6	$6.8	$5.1	$6.9	$21.6	$54.5	$19.5	$54.2	$781.8	$0.0	$8.0	$12.6	$13.4	$7.1	$183.7	$46.9	$64.9	$13.2	$66.2	$9.9	$7.2	$21.7	$57.4	$5.2	$12.6	$37.4	$7.1	$8.1	$53.5	$62.1	$5.7	$34.6	$20.5	$3,258.0
2009	$688.4	$65.4	$41.6	$187.5	$28.3	$140.1	$51.7	$96.1	$69.1	$49.0	$8.3	$6.2	$6.5	$5.7	$6.6	$21.5	$55.1	$17.1	$51.6	$864.2	$0.0	$8.0	$11.7	$12.7	$6.6	$208.3	$51.4	$71.3	$14.3	$66.5	$10.4	$7.4	$22.2	$53.4	$4.7	$10.0	$36.3	$7.2	$8.7	$55.5	$60.5	$5.6	$34.1	$20.0	$3,246.8
2010	$713.8	$67.1	$39.6	$210.7	$29.6	$149.7	$52.8	$101.6	$68.7	$48.9	$8.9	$6.3	$7.3	$5.7	$7.4	$22.1	$53.6	$17.4	$56.9	$944.1	$0.0	$8.4	$12.0	$11.8	$6.6	$217.4	$52.6	$71.5	$14.4	$73.7	$11.4	$7.9	$24.1	$54.7	$4.7	$9.4	$38.6	$6.8	$8.8	$59.4	$60.1	$5.3	$34.2	$20.4	$3,426.4

Table 15. $fGDP_{e+CO2}$, Stern SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World
1980	20%	14%	10%	33%	16%	12%	9%	12%	21%	12%	12%	11%	14%	8%	14%	23%	14%	16%	13%	127%	15%	18%	10%	11%	24%	29%	26%	39%	7%	22%	25%	13%	25%	13%	11%	23%	43%	8%	12%	19%	26%	7%	12%	29%	18%
1981	19%	13%	10%	31%	16%	11%	9%	11%	20%	10%	11%	10%	13%	8%	12%	22%	14%	15%	12%	116%	12%	17%	10%	10%	23%	30%	25%	36%	10%	21%	23%	15%	25%	13%	10%	23%	43%	8%	13%	18%	26%	6%	11%	27%	17%
1982	18%	12%	10%	26%	15%	10%	8%	10%	19%	9%	9%	9%	11%	7%	10%	23%	14%	14%	11%	107%	10%	16%	9%	9%	21%	30%	24%	35%	11%	19%	27%	14%	23%	12%	9%	23%	46%	8%	14%	19%	27%	6%	11%	25%	16%
1983	17%	11%	9%	20%	13%	9%	8%	9%	17%	8%	8%	7%	10%	6%	9%	22%	13%	12%	11%	99%	9%	14%	7%	9%	20%	28%	21%	33%	8%	17%	24%	15%	23%	11%	9%	23%	42%	8%	14%	21%	27%	6%	10%	24%	14%
1984	16%	10%	9%	20%	13%	9%	7%	9%	17%	8%	8%	7%	9%	6%	8%	22%	13%	12%	11%	90%	8%	14%	7%	8%	19%	30%	20%	34%	8%	17%	21%	16%	23%	12%	9%	23%	41%	8%	15%	21%	27%	5%	10%	23%	14%
1985	15%	10%	8%	19%	12%	8%	7%	8%	16%	8%	8%	8%	10%	6%	8%	21%	12%	11%	10%	84%	7%	14%	7%	9%	19%	30%	20%	34%	10%	16%	24%	16%	24%	11%	8%	22%	40%	7%	15%	21%	27%	5%	10%	22%	13%
1986	13%	9%	7%	14%	11%	7%	6%	9%	14%	7%	7%	7%	9%	6%	8%	18%	10%	11%	9%	78%	4%	12%	6%	7%	17%	28%	17%	32%	11%	14%	17%	15%	22%	10%	8%	19%	39%	6%	15%	17%	27%	5%	9%	19%	12%
1987	13%	9%	7%	15%	11%	7%	6%	10%	14%	7%	8%	7%	9%	6%	8%	19%	11%	11%	10%	76%	4%	11%	7%	9%	17%	28%	18%	35%	12%	14%	21%	19%	21%	10%	8%	20%	41%	7%	15%	19%	28%	5%	9%	20%	12%
1988	12%	9%	7%	14%	10%	7%	6%	9%	14%	6%	7%	6%	8%	6%	8%	19%	10%	10%	10%	71%	4%	12%	6%	9%	16%	27%	17%	37%	14%	13%	23%	17%	19%	10%	9%	18%	38%	6%	15%	18%	27%	5%	8%	18%	12%
1989	12%	8%	7%	15%	10%	7%	6%	8%	14%	6%	7%	6%	8%	6%	7%	21%	10%	10%	11%	70%	5%	12%	5%	9%	15%	28%	18%	39%	14%	13%	23%	18%	20%	10%	9%	20%	35%	6%	15%	18%	25%	5%	9%	20%	12%
1990	12%	9%	7%	13%	10%	7%	7%	8%	14%	7%	7%	6%	8%	6%	8%	21%	11%	10%	12%	72%	6%	11%	5%	10%	15%	29%	20%	37%	23%	14%	15%	20%	22%	11%	10%	21%	32%	7%	19%	18%	26%	5%	10%	21%	12%
1991	12%	9%	7%	13%	10%	7%	6%	11%	14%	7%	7%	7%	8%	6%	8%	19%	11%	10%	11%	65%	5%	11%	5%	9%	16%	30%	18%	36%	31%	14%	27%	17%	21%	10%	9%	21%	34%	7%	23%	18%	26%	5%	9%	18%	12%
1992	12%	8%	7%	50%	10%	7%	6%	11%	14%	7%	7%	6%	10%	7%	8%	17%	10%	10%	11%	65%	5%	11%	5%	9%	15%	30%	18%	35%	37%	14%	12%	15%	20%	10%	9%	21%	33%	6%	23%	17%	28%	5%	9%	17%	13%
1993	11%	8%	6%	46%	10%	7%	6%	10%	13%	6%	7%	6%	10%	7%	7%	17%	10%	9%	10%	59%	5%	12%	21%	9%	15%	28%	18%	34%	59%	14%	12%	15%	18%	9%	9%	21%	33%	6%	26%	16%	26%	5%	9%	16%	12%
1994	11%	7%	6%	49%	10%	7%	6%	9%	13%	6%	6%	6%	10%	6%	7%	16%	9%	9%	11%	49%	4%	11%	19%	9%	14%	28%	17%	36%	65%	14%	13%	16%	19%	9%	9%	20%	30%	6%	27%	17%	28%	5%	9%	18%	12%
1995	11%	7%	7%	51%	10%	7%	6%	10%	13%	6%	7%	6%	9%	7%	7%	17%	9%	10%	10%	47%	4%	10%	19%	9%	14%	30%	17%	37%	68%	14%	14%	20%	18%	9%	9%	20%	28%	7%	27%	17%	27%	5%	9%	18%	12%
1996	11%	7%	7%	47%	9%	7%	6%	8%	13%	7%	7%	7%	9%	7%	8%	18%	10%	10%	11%	44%	4%	11%	19%	9%	15%	27%	17%	36%	70%	15%	18%	21%	20%	10%	9%	20%	29%	7%	26%	18%	27%	5%	10%	19%	12%
1997	11%	6%	7%	42%	9%	7%	6%	8%	13%	6%	7%	6%	8%	6%	6%	17%	10%	10%	11%	41%	4%	11%	17%	9%	14%	28%	17%	36%	54%	15%	17%	21%	18%	9%	9%	18%	25%	7%	20%	17%	28%	5%	10%	17%	11%
1998	10%	6%	6%	42%	8%	7%	6%	7%	12%	6%	6%	5%	7%	6%	7%	15%	9%	9%	10%	37%	3%	10%	16%	9%	13%	26%	17%	33%	33%	13%	16%	19%	17%	9%	8%	16%	22%	6%	18%	15%	26%	5%	9%	16%	10%
1999	9%	6%	6%	43%	8%	7%	6%	7%	12%	5%	6%	5%	7%	6%	6%	17%	9%	9%	11%	35%	3%	10%	15%	9%	13%	26%	20%	36%	28%	14%	19%	20%	18%	9%	8%	16%	21%	6%	17%	17%	26%	4%	9%	18%	10%
2000	10%	6%	7%	41%	9%	8%	6%	7%	12%	5%	5%	5%	6%	4%	6%	19%	10%	9%	11%	36%	5%	11%	16%	10%	12%	28%	22%	38%	34%	15%	21%	23%	20%	10%	8%	17%	19%	7%	17%	20%	26%	4%	10%	19%	11%
2001	10%	6%	7%	37%	9%	7%	5%	7%	11%	5%	6%	5%	6%	4%	6%	18%	9%	9%	11%	33%	4%	10%	15%	9%	12%	26%	21%	37%	36%	14%	19%	23%	20%	9%	8%	17%	18%	7%	13%	19%	26%	4%	9%	19%	11%
2002	10%	5%	7%	36%	9%	7%	5%	7%	11%	5%	6%	5%	6%	5%	6%	18%	9%	9%	10%	32%	4%	9%	15%	9%	12%	25%	22%	37%	41%	13%	20%	26%	21%	9%	8%	17%	18%	7%	13%	20%	24%	4%	10%	21%	10%
2003	10%	5%	7%	36%	9%	7%	6%	7%	12%	6%	7%	6%	8%	6%	7%	20%	9%	10%	11%	35%	4%	10%	17%	9%	13%	24%	22%	38%	65%	14%	19%	23%	21%	10%	9%	17%	18%	7%	14%	21%	26%	4%	10%	23%	11%
2004	10%	6%	8%	37%	10%	7%	7%	8%	13%	6%	7%	6%	8%	6%	7%	22%	10%	11%	12%	38%	5%	10%	18%	9%	13%	26%	24%	42%	54%	13%	21%	27%	22%	11%	9%	16%	19%	8%	16%	24%	27%	5%	10%	22%	12%
2005	11%	6%	9%	38%	11%	7%	7%	8%	14%	6%	8%	6%	8%	6%	7%	24%	10%	11%	13%	40%	6%	11%	19%	10%	15%	26%	26%	53%	69%	14%	25%	29%	24%	12%	10%	18%	19%	8%	21%	27%	26%	5%	11%	21%	13%
2006	11%	7%	9%	38%	11%	7%	8%	9%	14%	7%	8%	6%	9%	6%	7%	23%	10%	11%	13%	40%	6%	12%	19%	10%	16%	27%	26%	56%	62%	14%	27%	28%	24%	13%	10%	16%	19%	8%	20%	29%	27%	5%	12%	24%	13%
2007	11%	6%	9%	35%	10%	7%	8%	9%	13%	7%	8%	6%	8%	6%	7%	24%	10%	12%	14%	39%	6%	12%	18%	10%	16%	27%	27%	56%	68%	15%	28%	28%	25%	13%	10%	15%	18%	9%	16%	29%	28%	5%	13%	24%	13%
2008	12%	7%	10%	38%	12%	8%	9%	10%	15%	8%	9%	7%	9%	6%	8%	26%	11%	14%	15%	42%	8%	13%	21%	12%	19%	29%	29%	62%	80%	16%	32%	33%	28%	15%	11%	15%	19%	10%	16%	35%	30%	5%	14%	30%	15%
2009	10%	6%	8%	34%	10%	8%	8%	9%	12%	7%	8%	6%	8%	6%	7%	20%	9%	11%	13%	37%	5%	11%	18%	10%	17%	26%	24%	55%	72%	13%	28%	27%	24%	12%	9%	11%	17%	9%	14%	29%	28%	5%	13%	25%	13%
2010	10%	6%	9%	38%	10%	8%	8%	9%	13%	7%	8%	6%	9%	7%	8%	20%	9%	12%	14%	37%	6%	11%	19%	10%	18%	28%	26%	60%	90%	16%	34%	31%	27%	13%	10%	11%	18%	9%	16%	34%	27%	5%	13%	30%	14%

Table 16. GDP Tax 2005$ U.S. Billions, 5% SCC, 1980-2010.

Year	United Sta	United Kin	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	$ 36.2	$ 7.1	$ 3.4	$ 6.1	$ 2.2	$ 15.1	$ 7.1	$ 11.0	$ 3.5	$ 8.0	$ 1.1	$ 1.0	$ 0.6	$ 0.9	$ 1.3
1981	$ 35.9	$ 6.8	$ 3.3	$ 6.1	$ 2.1	$ 15.2	$ 7.0	$ 10.7	$ 3.6	$ 7.8	$ 1.0	$ 0.9	$ 0.6	$ 0.9	$ 1.3
1982	$ 34.5	$ 6.8	$ 3.3	$ 6.1	$ 2.0	$ 15.4	$ 6.9	$ 10.4	$ 3.4	$ 7.9	$ 1.0	$ 0.9	$ 0.6	$ 0.9	$ 1.3
1983	$ 35.1	$ 6.8	$ 3.2	$ 6.2	$ 2.0	$ 15.4	$ 6.8	$ 10.3	$ 3.4	$ 7.7	$ 1.0	$ 0.9	$ 0.6	$ 0.9	$ 1.3
1984	$ 37.8	$ 7.1	$ 3.3	$ 6.3	$ 2.1	$ 16.2	$ 7.0	$ 10.7	$ 3.6	$ 7.9	$ 1.1	$ 1.0	$ 0.7	$ 1.0	$ 1.3
1985	$ 38.9	$ 7.2	$ 3.4	$ 6.3	$ 2.1	$ 17.0	$ 7.1	$ 10.8	$ 3.7	$ 7.9	$ 1.1	$ 1.0	$ 0.7	$ 1.0	$ 1.3
1986	$ 39.4	$ 7.4	$ 3.4	$ 6.4	$ 2.1	$ 17.2	$ 7.2	$ 10.8	$ 3.7	$ 8.0	$ 1.1	$ 1.0	$ 0.7	$ 1.0	$ 1.3
1987	$ 40.7	$ 7.7	$ 3.6	$ 6.5	$ 2.2	$ 17.9	$ 7.4	$ 11.0	$ 3.9	$ 8.1	$ 1.1	$ 1.0	$ 0.7	$ 1.0	$ 1.4
1988	$ 42.1	$ 8.0	$ 3.8	$ 6.5	$ 2.2	$ 19.0	$ 7.7	$ 11.3	$ 4.1	$ 8.5	$ 1.1	$ 1.0	$ 0.7	$ 1.0	$ 1.4
1989	$ 43.1	$ 8.1	$ 3.9	$ 6.7	$ 2.3	$ 19.8	$ 7.8	$ 11.6	$ 4.1	$ 8.7	$ 1.1	$ 1.0	$ 0.8	$ 1.0	$ 1.4
1990	$ 43.5	$ 8.1	$ 4.0	$ 4.6	$ 2.4	$ 20.7	$ 7.9	$ 12.1	$ 4.1	$ 8.9	$ 1.2	$ 1.0	$ 0.8	$ 1.0	$ 1.4
1991	$ 46.4	$ 8.6	$ 4.4	$ 4.7	$ 2.6	$ 22.9	$ 8.6	$ 13.6	$ 4.3	$ 9.6	$ 1.3	$ 1.1	$ 0.8	$ 1.1	$ 1.5
1992	$ 53.7	$ 9.6	$ 4.9	$ 4.5	$ 3.0	$ 25.8	$ 9.7	$ 15.5	$ 4.8	$ 10.9	$ 1.5	$ 1.3	$ 0.8	$ 1.3	$ 1.7
1993	$ 55.3	$ 9.8	$ 4.9	$ 4.1	$ 3.0	$ 25.9	$ 9.6	$ 15.4	$ 5.0	$ 10.8	$ 1.5	$ 1.3	$ 0.8	$ 1.4	$ 1.7
1994	$ 56.8	$ 10.1	$ 4.9	$ 3.5	$ 3.1	$ 25.8	$ 9.7	$ 15.5	$ 5.1	$ 10.9	$ 1.5	$ 1.3	$ 0.8	$ 1.4	$ 1.7
1995	$ 57.7	$ 10.3	$ 5.0	$ 3.4	$ 3.1	$ 26.0	$ 9.9	$ 15.7	$ 5.2	$ 11.0	$ 1.5	$ 1.3	$ 0.9	$ 1.5	$ 1.7
1996	$ 59.5	$ 10.5	$ 5.1	$ 3.2	$ 3.2	$ 26.5	$ 9.9	$ 15.7	$ 5.3	$ 11.1	$ 1.6	$ 1.4	$ 0.9	$ 1.5	$ 1.8
1997	$ 60.3	$ 10.9	$ 5.2	$ 3.2	$ 3.3	$ 26.1	$ 9.8	$ 15.5	$ 5.3	$ 11.0	$ 1.6	$ 1.4	$ 0.9	$ 1.6	$ 1.8
1998	$ 61.4	$ 11.0	$ 5.3	$ 2.9	$ 3.3	$ 25.0	$ 9.7	$ 15.4	$ 5.4	$ 11.1	$ 1.6	$ 1.4	$ 0.9	$ 1.6	$ 1.8
1999	$ 63.4	$ 11.2	$ 5.4	$ 3.1	$ 3.4	$ 24.5	$ 9.7	$ 15.4	$ 5.6	$ 11.3	$ 1.6	$ 1.4	$ 1.0	$ 1.6	$ 1.8
2000	$ 65.5	$ 11.6	$ 5.7	$ 3.3	$ 3.5	$ 25.0	$ 10.0	$ 15.8	$ 5.9	$ 11.6	$ 1.6	$ 1.4	$ 1.0	$ 1.6	$ 1.9
2001	$ 65.1	$ 11.8	$ 5.8	$ 3.4	$ 3.5	$ 24.7	$ 10.0	$ 15.7	$ 5.9	$ 11.6	$ 1.6	$ 1.4	$ 1.0	$ 1.6	$ 1.9
2002	$ 66.1	$ 12.1	$ 5.9	$ 3.6	$ 3.5	$ 24.7	$ 10.0	$ 15.7	$ 6.0	$ 11.7	$ 1.7	$ 1.4	$ 1.0	$ 1.6	$ 1.9
2003	$ 69.1	$ 12.7	$ 6.2	$ 3.9	$ 3.6	$ 25.5	$ 10.2	$ 15.9	$ 6.3	$ 12.0	$ 1.7	$ 1.4	$ 1.1	$ 1.7	$ 2.0
2004	$ 72.4	$ 13.3	$ 6.5	$ 4.3	$ 3.7	$ 26.5	$ 10.5	$ 16.3	$ 6.5	$ 12.5	$ 1.8	$ 1.5	$ 1.1	$ 1.8	$ 2.1
2005	$ 74.6	$ 13.5	$ 6.7	$ 4.5	$ 3.8	$ 27.0	$ 10.6	$ 16.4	$ 6.7	$ 12.7	$ 1.8	$ 1.5	$ 1.2	$ 1.8	$ 2.2
2006	$ 75.6	$ 13.7	$ 6.9	$ 4.8	$ 3.9	$ 27.2	$ 10.7	$ 16.8	$ 6.8	$ 12.8	$ 1.9	$ 1.6	$ 1.2	$ 1.8	$ 2.3
2007	$ 76.0	$ 14.0	$ 7.0	$ 5.2	$ 4.0	$ 27.5	$ 10.7	$ 17.1	$ 6.9	$ 12.9	$ 1.9	$ 1.6	$ 1.2	$ 1.8	$ 2.3
2008	$ 75.5	$ 13.8	$ 7.1	$ 5.4	$ 4.0	$ 27.1	$ 10.6	$ 17.3	$ 6.9	$ 12.9	$ 1.9	$ 1.5	$ 1.2	$ 1.8	$ 2.3
2009	$ 74.5	$ 13.5	$ 7.0	$ 5.1	$ 4.0	$ 26.0	$ 10.2	$ 16.7	$ 6.9	$ 12.8	$ 1.9	$ 1.5	$ 1.2	$ 1.9	$ 2.2
2010	$ 77.8	$ 14.0	$ 7.1	$ 5.4	$ 4.1	$ 27.4	$ 10.6	$ 17.6	$ 7.2	$ 13.2	$ 2.0	$ 1.5	$ 1.2	$ 1.9	$ 2.4

Year	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq
1980	$ 0.8	$ 2.1	$ 1.4	$ 3.2	$ 1.3	$ 0.5	$ 0.4	$ 0.6	$ 0.9	$ 0.5	$ 1.3	$ 0.5	$ 0.5	$ 1.0
1981	$ 0.7	$ 2.1	$ 1.4	$ 3.0	$ 1.4	$ 0.5	$ 0.4	$ 0.5	$ 0.9	$ 0.5	$ 1.3	$ 0.5	$ 0.5	$ 0.6
1982	$ 0.7	$ 2.0	$ 1.4	$ 2.9	$ 1.5	$ 0.5	$ 0.4	$ 0.5	$ 0.8	$ 0.5	$ 1.3	$ 0.5	$ 0.5	$ 0.5
1983	$ 0.7	$ 2.0	$ 1.3	$ 2.7	$ 1.6	$ 0.6	$ 0.4	$ 0.5	$ 0.8	$ 0.5	$ 1.4	$ 0.6	$ 0.6	$ 0.7
1984	$ 0.7	$ 2.1	$ 1.4	$ 2.9	$ 1.8	$ 0.6	$ 0.4	$ 0.5	$ 0.8	$ 0.5	$ 1.4	$ 0.6	$ 0.6	$ 0.7
1985	$ 0.6	$ 2.2	$ 1.4	$ 3.1	$ 2.1	$ 0.6	$ 0.4	$ 0.5	$ 0.8	$ 0.5	$ 1.5	$ 0.6	$ 0.6	$ 0.6
1986	$ 0.7	$ 2.2	$ 1.4	$ 3.3	$ 2.2	$ 0.7	$ 0.4	$ 0.5	$ 0.8	$ 0.5	$ 1.5	$ 0.6	$ 0.5	$ 0.5
1987	$ 0.7	$ 2.4	$ 1.4	$ 3.4	$ 2.5	$ 0.8	$ 0.5	$ 0.5	$ 0.8	$ 0.5	$ 1.6	$ 0.7	$ 0.5	$ 0.5
1988	$ 0.7	$ 2.4	$ 1.5	$ 3.4	$ 2.7	$ 0.8	$ 0.5	$ 0.6	$ 0.8	$ 0.5	$ 1.7	$ 0.7	$ 0.5	$ 0.4
1989	$ 0.6	$ 2.5	$ 1.5	$ 3.5	$ 2.8	$ 0.9	$ 0.5	$ 0.6	$ 0.9	$ 0.5	$ 1.8	$ 0.8	$ 0.5	$ 0.4
1990	$ 0.6	$ 2.5	$ 1.5	$ 3.3	$ 2.9	$ 0.9	$ 0.5	$ 0.6	$ 0.9	$ 0.5	$ 1.9	$ 0.8	$ 0.6	$ 0.3
1991	$ 0.7	$ 2.7	$ 1.7	$ 3.6	$ 3.4	$ 1.1	$ 0.6	$ 0.5	$ 0.9	$ 0.5	$ 2.1	$ 1.0	$ 0.7	$ 0.2
1992	$ 0.9	$ 3.1	$ 1.9	$ 4.0	$ 4.3	$ 1.3	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 2.4	$ 1.1	$ 0.8	$ 0.2
1993	$ 0.9	$ 3.2	$ 1.9	$ 4.1	$ 4.9	$ 1.4	$ 0.7	$ 0.6	$ 1.0	$ 0.5	$ 2.6	$ 1.2	$ 0.8	$ 0.1
1994	$ 1.0	$ 3.3	$ 1.9	$ 4.3	$ 5.5	$ 1.4	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 2.7	$ 1.3	$ 0.8	$ 0.1
1995	$ 0.9	$ 3.4	$ 1.9	$ 4.5	$ 6.0	$ 1.5	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 2.9	$ 1.4	$ 0.8	$ 0.1
1996	$ 1.0	$ 3.5	$ 2.0	$ 4.5	$ 6.6	$ 1.6	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 3.1	$ 1.5	$ 0.8	$ 0.1
1997	$ 1.0	$ 3.6	$ 2.0	$ 4.5	$ 6.9	$ 1.6	$ 0.8	$ 0.6	$ 1.1	$ 0.5	$ 3.1	$ 1.5	$ 0.8	$ 0.2
1998	$ 1.0	$ 3.7	$ 2.0	$ 4.4	$ 7.3	$ 1.6	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 3.2	$ 1.3	$ 0.8	$ 0.2
1999	$ 1.0	$ 3.7	$ 2.0	$ 4.4	$ 7.7	$ 1.7	$ 0.7	$ 0.6	$ 1.1	$ 0.5	$ 3.4	$ 1.3	$ 0.8	$ 0.3
2000	$ 1.0	$ 3.8	$ 2.0	$ 4.5	$ 8.3	$ 1.8	$ 0.7	$ 0.6	$ 1.2	$ 0.5	$ 3.5	$ 1.3	$ 0.9	$ 0.2
2001	$ 0.9	$ 3.9	$ 2.0	$ 4.5	$ 8.9	$ 1.7	$ 0.7	$ 0.6	$ 1.2	$ 0.5	$ 3.6	$ 1.4	$ 0.9	$ 0.2
2002	$ 0.8	$ 4.0	$ 2.1	$ 4.6	$ 9.6	$ 1.8	$ 0.7	$ 0.6	$ 1.2	$ 0.6	$ 3.7	$ 1.4	$ 0.9	$ 0.2
2003	$ 0.9	$ 4.2	$ 2.1	$ 4.7	$ 10.8	$ 1.9	$ 0.8	$ 0.7	$ 1.3	$ 0.6	$ 4.1	$ 1.5	$ 1.0	$ 0.1
2004	$ 1.0	$ 4.4	$ 2.2	$ 5.1	$ 12.0	$ 2.1	$ 0.8	$ 0.7	$ 1.4	$ 0.6	$ 4.5	$ 1.6	$ 1.1	$ 0.2
2005	$ 1.1	$ 4.5	$ 2.2	$ 5.2	$ 13.4	$ 2.2	$ 0.9	$ 0.8	$ 1.4	$ 0.7	$ 5.0	$ 1.7	$ 1.1	$ 0.2
2006	$ 1.2	$ 4.6	$ 2.3	$ 5.4	$ 14.9	$ 2.3	$ 0.9	$ 0.8	$ 1.5	$ 0.7	$ 5.3	$ 1.8	$ 1.2	$ 0.2
2007	$ 1.2	$ 4.8	$ 2.3	$ 5.6	$ 16.8	$ 2.4	$ 1.0	$ 0.9	$ 1.5	$ 0.7	$ 5.8	$ 1.9	$ 1.3	$ 0.2
2008	$ 1.3	$ 4.8	$ 2.3	$ 5.9	$ 18.4	$ 2.4	$ 1.0	$ 0.9	$ 1.5	$ 0.7	$ 6.1	$ 2.0	$ 1.3	$ 0.2
2009	$ 1.4	$ 5.0	$ 2.3	$ 6.0	$ 20.5	$ 2.4	$ 1.0	$ 0.9	$ 1.5	$ 0.6	$ 6.8	$ 2.1	$ 1.3	$ 0.2
2010	$ 1.5	$ 5.2	$ 2.4	$ 6.5	$ 22.9	$ 2.7	$ 1.1	$ 0.9	$ 1.5	$ 0.7	$ 7.5	$ 2.3	$ 1.4	$ 0.2

Year	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Ara	Soth Afric	Switzerlar	Turkey	Venezuel	World 44
1980	$ 0.9	$ 0.3	$ 0.3	$ 0.2	$ 2.9	$ 0.4	$ 0.4	$ 1.1	$ 0.6	$ 0.1	$ 1.3	$ 0.9	$ 1.6	$ 1.0	$ 0.6	$ 132.2
1981	$ 0.9	$ 0.2	$ 0.3	$ 0.2	$ 3.0	$ 0.4	$ 0.3	$ 1.0	$ 0.6	$ 0.1	$ 1.4	$ 0.9	$ 1.5	$ 1.0	$ 0.6	$ 129.8
1982	$ 1.0	$ 0.2	$ 0.3	$ 0.2	$ 2.9	$ 0.4	$ 0.3	$ 0.9	$ 0.6	$ 0.1	$ 1.2	$ 0.9	$ 1.5	$ 1.0	$ 0.6	$ 127.3
1983	$ 1.1	$ 0.2	$ 0.2	$ 0.2	$ 2.7	$ 0.4	$ 0.3	$ 0.9	$ 0.6	$ 0.1	$ 1.1	$ 0.9	$ 1.5	$ 1.1	$ 0.5	$ 127.7
1984	$ 1.2	$ 0.2	$ 0.2	$ 0.2	$ 2.8	$ 0.4	$ 0.3	$ 1.0	$ 0.6	$ 0.1	$ 1.0	$ 0.9	$ 1.5	$ 1.1	$ 0.5	$ 134.3
1985	$ 1.3	$ 0.2	$ 0.2	$ 0.2	$ 2.9	$ 0.4	$ 0.3	$ 1.0	$ 0.6	$ 0.1	$ 1.0	$ 0.9	$ 1.6	$ 1.2	$ 0.5	$ 137.2
1986	$ 1.4	$ 0.2	$ 0.2	$ 0.2	$ 2.7	$ 0.4	$ 0.3	$ 1.1	$ 0.6	$ 0.1	$ 1.0	$ 0.9	$ 1.6	$ 1.2	$ 0.5	$ 139.0
1987	$ 1.6	$ 0.2	$ 0.2	$ 0.2	$ 2.8	$ 0.4	$ 0.3	$ 1.1	$ 0.6	$ 0.1	$ 1.0	$ 0.9	$ 1.6	$ 1.4	$ 0.6	$ 143.6
1988	$ 1.7	$ 0.2	$ 0.2	$ 0.3	$ 2.8	$ 0.4	$ 0.3	$ 1.1	$ 0.7	$ 0.1	$ 1.0	$ 0.9	$ 1.6	$ 1.4	$ 0.6	$ 149.1
1989	$ 1.8	$ 0.2	$ 0.2	$ 0.3	$ 2.9	$ 0.4	$ 0.3	$ 1.1	$ 0.7	$ 0.1	$ 1.0	$ 0.9	$ 1.7	$ 1.4	$ 0.5	$ 152.9
1990	$ 2.0	$ 0.2	$ 0.2	$ 0.3	$ 3.0	$ 0.4	$ 0.3	$ 1.0	$ 0.8	$ 0.1	$ 1.1	$ 0.9	$ 1.7	$ 1.5	$ 0.6	$ 153.4
1991	$ 2.3	$ 0.1	$ 0.2	$ 0.4	$ 3.3	$ 0.4	$ 0.4	$ 1.0	$ 0.8	$ 0.1	$ 1.3	$ 1.0	$ 1.8	$ 1.6	$ 0.7	$ 166.3
1992	$ 2.7	$ 0.2	$ 0.3	$ 0.4	$ 3.9	$ 0.5	$ 0.4	$ 1.1	$ 0.9	$ 0.1	$ 1.5	$ 1.1	$ 2.0	$ 1.9	$ 0.8	$ 189.5
1993	$ 2.9	$ 0.3	$ 0.3	$ 0.5	$ 4.0	$ 0.5	$ 0.5	$ 1.2	$ 0.9	$ 0.1	$ 1.5	$ 1.1	$ 2.0	$ 2.0	$ 0.8	$ 192.9
1994	$ 3.1	$ 0.3	$ 0.3	$ 0.5	$ 4.1	$ 0.5	$ 0.5	$ 1.2	$ 0.9	$ 0.1	$ 1.5	$ 1.1	$ 2.0	$ 1.9	$ 0.8	$ 196.1
1995	$ 3.4	$ 0.3	$ 0.2	$ 0.6	$ 3.8	$ 0.5	$ 0.5	$ 1.3	$ 1.0	$ 0.1	$ 1.5	$ 1.1	$ 2.0	$ 2.0	$ 0.8	$ 199.7
1996	$ 3.6	$ 0.3	$ 0.2	$ 0.6	$ 3.9	$ 0.5	$ 0.5	$ 1.4	$ 1.0	$ 0.1	$ 1.5	$ 1.2	$ 2.0	$ 2.1	$ 0.8	$ 204.6
1997	$ 3.7	$ 0.3	$ 0.2	$ 0.6	$ 4.1	$ 0.5	$ 0.5	$ 1.4	$ 1.0	$ 0.1	$ 1.5	$ 1.2	$ 2.0	$ 2.2	$ 0.8	$ 206.1
1998	$ 3.4	$ 0.3	$ 0.2	$ 0.6	$ 4.2	$ 0.5	$ 0.5	$ 1.4	$ 1.0	$ 0.1	$ 1.5	$ 1.2	$ 2.0	$ 2.3	$ 0.8	$ 206.2
1999	$ 3.7	$ 0.3	$ 0.2	$ 0.6	$ 4.3	$ 0.5	$ 0.5	$ 1.5	$ 1.0	$ 0.2	$ 1.5	$ 1.2	$ 2.0	$ 2.1	$ 0.7	$ 209.9
2000	$ 4.0	$ 0.3	$ 0.2	$ 0.6	$ 4.5	$ 0.6	$ 0.5	$ 1.5	$ 1.1	$ 0.2	$ 1.5	$ 1.2	$ 2.0	$ 2.3	$ 0.8	$ 217.1
2001	$ 4.1	$ 0.3	$ 0.2	$ 0.6	$ 4.4	$ 0.6	$ 0.5	$ 1.5	$ 1.1	$ 0.2	$ 1.5	$ 1.2	$ 2.0	$ 2.1	$ 0.8	$ 217.3
2002	$ 4.4	$ 0.3	$ 0.2	$ 0.7	$ 4.5	$ 0.6	$ 0.5	$ 1.5	$ 1.1	$ 0.2	$ 1.5	$ 1.3	$ 2.0	$ 2.2	$ 0.7	$ 221.0
2003	$ 4.6	$ 0.4	$ 0.2	$ 0.7	$ 4.6	$ 0.6	$ 0.6	$ 1.6	$ 1.1	$ 0.2	$ 1.7	$ 1.3	$ 2.1	$ 2.4	$ 0.7	$ 231.0
2004	$ 4.8	$ 0.4	$ 0.2	$ 0.8	$ 4.9	$ 0.7	$ 0.6	$ 1.7	$ 1.1	$ 0.2	$ 1.8	$ 1.4	$ 2.2	$ 2.6	$ 0.8	$ 242.9
2005	$ 5.0	$ 0.5	$ 0.3	$ 0.8	$ 5.0	$ 0.7	$ 0.7	$ 1.8	$ 1.1	$ 0.3	$ 1.9	$ 1.5	$ 2.2	$ 2.9	$ 0.9	$ 250.9
2006	$ 5.2	$ 0.5	$ 0.3	$ 0.9	$ 5.2	$ 0.7	$ 0.7	$ 1.9	$ 1.1	$ 0.3	$ 1.9	$ 1.5	$ 2.3	$ 3.0	$ 0.9	$ 257.5
2007	$ 5.4	$ 0.5	$ 0.3	$ 0.9	$ 5.3	$ 0.7	$ 0.7	$ 2.0	$ 1.2	$ 0.4	$ 1.9	$ 1.6	$ 2.3	$ 3.1	$ 1.0	$ 263.6
2008	$ 5.5	$ 0.5	$ 0.3	$ 0.9	$ 5.4	$ 0.7	$ 0.8	$ 2.1	$ 1.1	$ 0.5	$ 2.0	$ 1.6	$ 2.4	$ 3.1	$ 1.1	$ 266.2
2009	$ 5.6	$ 0.5	$ 0.3	$ 0.9	$ 5.1	$ 0.7	$ 0.8	$ 2.2	$ 1.1	$ 0.5	$ 2.0	$ 1.7	$ 2.4	$ 3.1	$ 1.0	$ 265.3
2010	$ 6.1	$ 0.5	$ 0.3	$ 1.0	$ 5.5	$ 0.7	$ 0.9	$ 2.3	$ 1.2	$ 0.6	$ 2.2	$ 1.7	$ 2.5	$ 3.4	$ 1.0	$ 280.0

Table 17. GDP Tax $fGDP_{e+CO2}$, 5% SCC, 1980-2010.

Year	United Sta	United Kin	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	11%	8%	6%	34%	9%	7%	6%	13%	11%	8%	8%	6%	8%	6%	10%
1981	10%	7%	6%	31%	9%	7%	6%	12%	11%	7%	7%	5%	8%	6%	9%
1982	9%	6%	5%	26%	9%	6%	5%	11%	10%	6%	6%	5%	6%	5%	7%
1983	8%	5%	5%	21%	8%	5%	4%	10%	9%	5%	5%	4%	6%	5%	6%
1984	8%	5%	4%	21%	7%	5%	4%	9%	9%	5%	5%	3%	5%	4%	5%
1985	7%	5%	4%	20%	6%	5%	4%	9%	8%	5%	5%	4%	5%	4%	6%
1986	5%	4%	3%	14%	5%	4%	3%	9%	6%	4%	4%	3%	4%	4%	5%
1987	5%	4%	4%	16%	5%	4%	3%	10%	6%	5%	5%	3%	4%	5%	5%
1988	5%	4%	4%	15%	4%	4%	3%	9%	6%	4%	4%	3%	4%	5%	5%
1989	5%	4%	3%	16%	4%	4%	3%	8%	6%	4%	4%	2%	4%	4%	5%
1990	5%	4%	4%	14%	5%	4%	3%	8%	7%	5%	4%	3%	4%	4%	6%
1991	5%	4%	4%	13%	4%	4%	3%	7%	7%	4%	4%	3%	4%	5%	6%
1992	4%	4%	4%	14%	5%	4%	3%	7%	7%	5%	4%	3%	5%	6%	6%
1993	4%	3%	3%	9%	5%	4%	3%	6%	6%	4%	4%	2%	5%	6%	5%
1994	4%	3%	3%	10%	5%	4%	3%	6%	6%	4%	4%	2%	5%	5%	4%
1995	4%	3%	3%	13%	5%	5%	3%	6%	5%	4%	4%	2%	5%	5%	5%
1996	4%	3%	4%	9%	4%	4%	3%	4%	6%	4%	4%	3%	5%	5%	5%
1997	4%	3%	3%	8%	4%	4%	3%	4%	5%	4%	4%	3%	4%	4%	4%
1998	3%	3%	3%	7%	3%	4%	3%	3%	4%	3%	4%	2%	4%	4%	5%
1999	3%	3%	3%	8%	3%	4%	3%	3%	5%	3%	3%	2%	4%	4%	4%
2000	4%	3%	3%	8%	4%	5%	3%	3%	5%	3%	3%	2%	3%	3%	4%
2001	4%	3%	3%	7%	4%	4%	3%	3%	5%	3%	3%	2%	3%	3%	4%
2002	4%	2%	3%	6%	4%	4%	3%	3%	5%	3%	3%	2%	3%	3%	4%
2003	4%	3%	4%	7%	5%	4%	3%	4%	6%	4%	4%	3%	4%	4%	5%
2004	5%	3%	4%	9%	5%	4%	4%	5%	6%	4%	5%	3%	4%	4%	5%
2005	5%	4%	5%	12%	6%	4%	4%	5%	7%	5%	5%	4%	5%	5%	6%
2006	6%	4%	5%	13%	7%	5%	5%	6%	8%	5%	6%	4%	5%	5%	6%
2007	6%	4%	6%	13%	6%	5%	5%	6%	8%	5%	6%	4%	5%	5%	6%
2008	7%	5%	7%	17%	8%	5%	6%	7%	10%	6%	7%	5%	7%	5%	7%
2009	5%	4%	5%	13%	7%	5%	5%	6%	6%	5%	6%	4%	5%	5%	6%
2010	6%	4%	6%	16%	7%	5%	6%	6%	7%	6%	6%	5%	6%	6%	6%

Year	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq
1980	14%	7%	9%	9%	43%	16%	11%	10%	7%	11%	12%	13%	22%	4%
1981	13%	7%	8%	8%	36%	13%	10%	11%	6%	10%	11%	12%	19%	5%
1982	13%	7%	7%	8%	30%	10%	9%	9%	5%	9%	11%	11%	16%	6%
1983	11%	6%	7%	7%	26%	9%	7%	8%	5%	8%	10%	9%	13%	4%
1984	11%	5%	6%	7%	21%	8%	7%	7%	4%	7%	9%	8%	15%	4%
1985	10%	5%	6%	6%	19%	7%	7%	7%	4%	7%	9%	8%	14%	5%
1986	7%	3%	5%	5%	15%	5%	6%	6%	3%	6%	6%	5%	9%	3%
1987	8%	4%	5%	6%	16%	5%	5%	7%	3%	7%	7%	6%	11%	4%
1988	8%	3%	5%	6%	14%	5%	6%	6%	3%	6%	7%	5%	10%	4%
1989	8%	4%	5%	7%	13%	5%	6%	6%	3%	5%	7%	5%	12%	4%
1990	10%	4%	5%	8%	18%	6%	6%	5%	4%	6%	8%	7%	13%	8%
1991	8%	4%	5%	6%	13%	5%	5%	5%	3%	6%	9%	6%	11%	11%
1992	8%	4%	5%	7%	18%	6%	5%	6%	3%	6%	8%	5%	10%	14%
1993	7%	3%	4%	6%	16%	5%	6%	5%	3%	5%	6%	5%	9%	20%
1994	7%	3%	4%	6%	9%	4%	5%	5%	3%	5%	6%	5%	9%	20%
1995	7%	3%	5%	5%	9%	4%	5%	5%	3%	6%	6%	5%	10%	22%
1996	8%	3%	5%	6%	8%	4%	5%	5%	4%	6%	7%	5%	11%	24%
1997	7%	3%	4%	6%	8%	4%	5%	5%	3%	5%	7%	5%	9%	21%
1998	6%	2%	4%	5%	7%	4%	4%	5%	3%	5%	5%	4%	6%	8%
1999	7%	3%	4%	6%	7%	4%	4%	4%	3%	5%	6%	5%	8%	7%
2000	9%	3%	4%	6%	8%	5%	5%	5%	4%	5%	7%	8%	11%	13%
2001	8%	3%	4%	6%	7%	4%	5%	5%	3%	5%	6%	7%	10%	12%
2002	8%	3%	5%	5%	7%	4%	5%	5%	3%	5%	6%	7%	9%	14%
2003	9%	3%	5%	6%	8%	4%	5%	7%	3%	6%	6%	8%	10%	24%
2004	12%	3%	6%	7%	10%	5%	6%	9%	4%	7%	8%	10%	14%	23%
2005	14%	4%	7%	8%	12%	6%	7%	10%	5%	9%	9%	12%	23%	31%
2006	14%	4%	7%	9%	12%	7%	7%	10%	6%	10%	10%	12%	27%	28%
2007	14%	4%	8%	9%	13%	7%	8%	10%	6%	10%	10%	13%	29%	31%
2008	17%	5%	10%	11%	18%	8%	9%	13%	8%	13%	12%	16%	34%	45%
2009	11%	3%	7%	8%	13%	6%	7%	11%	5%	11%	9%	11%	25%	36%
2010	12%	4%	9%	9%	13%	7%	7%	11%	6%	12%	11%	12%	30%	54%

Year	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Ara	Soth Afric	Switzerlar	Turkey	Venezuel	World 44
1980	11%	15%	6%	15%	7%	7%	9%	14%	6%	3%	10%	7%	5%	7%	17%	11%
1981	11%	15%	8%	15%	7%	6%	9%	14%	6%	3%	9%	6%	5%	7%	14%	10%
1982	9%	17%	7%	13%	6%	6%	9%	15%	5%	3%	9%	5%	4%	6%	12%	9%
1983	8%	14%	8%	11%	5%	5%	8%	13%	5%	3%	10%	5%	4%	5%	11%	8%
1984	7%	12%	8%	11%	5%	5%	7%	11%	5%	4%	8%	4%	4%	5%	10%	7%
1985	7%	14%	7%	11%	5%	4%	6%	11%	4%	4%	9%	4%	4%	4%	10%	7%
1986	5%	7%	4%	7%	3%	3%	4%	11%	3%	4%	4%	3%	4%	3%	6%	6%
1987	6%	10%	7%	8%	4%	4%	5%	13%	4%	4%	6%	3%	4%	4%	8%	6%
1988	5%	9%	4%	7%	3%	4%	4%	12%	3%	4%	5%	3%	4%	3%	6%	5%
1989	6%	11%	5%	7%	4%	4%	4%	10%	3%	4%	5%	3%	3%	4%	7%	5%
1990	6%	6%	5%	8%	4%	5%	5%	9%	3%	4%	5%	4%	4%	4%	8%	6%
1991	6%	2%	4%	7%	4%	5%	4%	10%	3%	4%	5%	4%	4%	4%	6%	5%
1992	6%	3%	4%	6%	4%	5%	4%	10%	3%	3%	5%	4%	4%	4%	6%	5%
1993	5%	3%	4%	6%	3%	4%	4%	9%	3%	2%	4%	3%	4%	4%	5%	5%
1994	5%	4%	4%	6%	3%	4%	3%	9%	3%	3%	5%	3%	4%	3%	6%	4%
1995	6%	5%	6%	6%	3%	5%	3%	9%	3%	4%	5%	3%	4%	4%	6%	5%
1996	6%	6%	6%	7%	3%	5%	3%	9%	4%	4%	6%	3%	4%	4%	6%	5%
1997	6%	4%	6%	6%	3%	5%	3%	7%	3%	2%	4%	3%	4%	4%	4%	4%
1998	5%	3%	4%	4%	3%	4%	3%	6%	3%	2%	3%	3%	3%	3%	3%	4%
1999	6%	6%	6%	5%	3%	4%	3%	5%	2%	2%	4%	3%	3%	3%	5%	4%
2000	7%	8%	9%	7%	4%	4%	5%	5%	3%	2%	6%	3%	3%	4%	6%	4%
2001	6%	7%	8%	6%	4%	4%	4%	5%	3%	2%	5%	3%	3%	4%	6%	4%
2002	6%	8%	8%	6%	3%	4%	4%	5%	3%	2%	6%	2%	3%	4%	7%	4%
2003	7%	8%	9%	7%	4%	4%	5%	6%	4%	3%	6%	3%	3%	4%	8%	4%
2004	6%	10%	11%	9%	5%	5%	5%	7%	4%	4%	8%	4%	4%	5%	9%	5%
2005	7%	14%	13%	11%	7%	6%	7%	8%	5%	6%	11%	5%	4%	5%	9%	6%
2006	8%	16%	14%	11%	7%	6%	6%	8%	5%	6%	14%	6%	4%	6%	12%	7%
2007	9%	18%	14%	13%	8%	7%	5%	8%	5%	5%	15%	7%	4%	7%	13%	7%
2008	10%	22%	19%	15%	10%	8%	7%	9%	7%	6%	20%	9%	5%	9%	19%	9%
2009	7%	17%	14%	11%	6%	6%	4%	7%	5%	5%	14%	7%	4%	7%	14%	7%
2010	9%	21%	18%	13%	8%	7%	5%	8%	7%	8%	18%	7%	4%	7%	19%	7%

Table 18. GDP Tax 2005$ U.S. Billions, 3% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$118.2	$23.1	$11.2	$20.1	$7.2	$49.2	$23.3	$35.9	$11.6	$26.2	$3.5	$3.1	$2.1	$3.0	$4.3	$2.5	$6.8	$4.7	$10.5	$4.4	$1.6	$1.4	$1.8
1981	$117.4	$22.1	$10.8	$19.9	$6.9	$49.6	$22.8	$34.9	$11.6	$25.6	$3.4	$3.0	$2.1	$3.0	$4.2	$2.3	$6.8	$4.5	$9.7	$4.5	$1.7	$1.3	$1.8
1982	$112.6	$22.1	$10.7	$20.0	$6.7	$50.2	$22.4	$34.1	$11.0	$25.7	$3.4	$3.0	$2.1	$2.9	$4.1	$2.1	$6.5	$4.4	$9.5	$4.8	$1.7	$1.3	$1.8
1983	$114.6	$22.3	$10.6	$20.1	$6.6	$50.4	$22.1	$33.7	$11.0	$25.3	$3.4	$3.0	$2.1	$2.9	$4.1	$2.2	$6.6	$4.3	$9.0	$5.2	$1.8	$1.3	$1.7
1984	$123.7	$23.1	$10.9	$20.5	$6.9	$53.0	$22.9	$34.9	$11.8	$25.8	$3.4	$3.2	$2.2	$3.1	$4.3	$2.2	$7.0	$4.5	$9.5	$6.0	$2.0	$1.4	$1.8
1985	$127.0	$23.6	$11.0	$20.5	$6.9	$55.6	$23.2	$35.2	$12.2	$25.9	$3.5	$3.3	$2.2	$3.3	$4.3	$2.0	$7.2	$4.5	$10.1	$6.7	$2.0	$1.4	$1.8
1986	$128.9	$24.1	$11.1	$20.9	$7.0	$56.1	$23.5	$35.3	$12.2	$26.0	$3.5	$3.4	$2.2	$3.3	$4.4	$2.2	$7.3	$4.5	$10.7	$7.2	$2.2	$1.4	$1.8
1987	$133.1	$25.2	$11.7	$21.2	$7.1	$58.4	$24.2	$35.9	$12.8	$26.6	$3.5	$3.4	$2.3	$3.4	$4.5	$2.2	$7.7	$4.6	$11.1	$8.0	$2.5	$1.5	$1.8
1988	$137.7	$26.3	$12.3	$21.4	$7.3	$62.2	$25.1	$37.0	$13.3	$27.7	$3.6	$3.3	$2.4	$3.4	$4.6	$2.2	$8.0	$4.8	$11.0	$8.9	$2.6	$1.6	$1.8
1989	$141.0	$26.6	$12.7	$21.8	$7.6	$64.8	$25.7	$38.0	$13.5	$28.5	$3.7	$3.3	$2.5	$3.4	$4.7	$2.0	$8.2	$4.9	$11.3	$9.1	$2.8	$1.6	$1.9
1990	$142.2	$26.5	$13.1	$15.1	$7.8	$67.8	$25.9	$39.6	$13.4	$29.0	$3.8	$3.3	$2.5	$3.4	$4.7	$1.9	$8.1	$5.0	$10.7	$9.4	$3.0	$1.7	$1.8
1991	$151.7	$28.0	$14.3	$15.3	$8.6	$74.9	$28.2	$44.5	$14.0	$31.3	$4.3	$3.6	$2.5	$3.7	$5.0	$2.3	$8.7	$5.4	$11.6	$11.0	$3.4	$1.8	$1.7
1992	$175.3	$31.3	$16.2	$14.6	$9.7	$84.4	$31.7	$50.7	$15.8	$35.6	$4.9	$4.1	$2.7	$4.3	$5.5	$2.9	$10.1	$6.2	$12.9	$14.0	$4.1	$2.2	$1.9
1993	$180.8	$32.1	$16.0	$13.4	$9.9	$84.7	$31.5	$50.3	$16.2	$35.4	$4.9	$4.1	$2.7	$4.5	$5.4	$3.0	$10.5	$6.1	$13.5	$16.0	$4.4	$2.2	$1.9
1994	$185.5	$33.0	$16.2	$11.5	$10.0	$84.2	$31.7	$50.8	$16.8	$35.7	$4.9	$4.3	$2.8	$4.6	$5.5	$3.2	$10.8	$6.2	$14.1	$17.8	$4.7	$2.3	$1.9
1995	$188.6	$33.7	$16.5	$11.0	$10.3	$85.1	$32.4	$51.2	$17.1	$36.1	$5.0	$4.4	$2.8	$4.8	$5.7	$3.1	$11.1	$6.3	$14.6	$19.6	$5.0	$2.4	$2.0
1996	$194.5	$34.4	$16.8	$10.5	$10.5	$86.7	$32.5	$51.3	$17.2	$36.2	$5.1	$4.5	$2.9	$5.0	$5.8	$3.2	$11.5	$6.4	$14.8	$21.4	$5.2	$2.4	$2.1
1997	$197.1	$35.5	$16.9	$10.3	$10.7	$85.4	$32.1	$50.6	$17.4	$35.9	$5.1	$4.5	$3.0	$5.1	$5.7	$3.4	$11.6	$6.4	$14.8	$22.7	$5.3	$2.5	$2.0
1998	$200.7	$35.9	$17.2	$9.5	$10.8	$81.6	$31.8	$50.3	$17.7	$36.2	$5.1	$4.5	$3.1	$5.1	$5.8	$3.4	$11.9	$6.4	$14.5	$23.9	$5.4	$2.4	$2.0
1999	$207.2	$36.6	$17.7	$10.0	$11.1	$80.2	$31.7	$50.4	$18.4	$36.8	$5.2	$4.5	$3.2	$5.1	$6.0	$3.2	$12.2	$6.5	$14.3	$25.3	$5.6	$2.3	$2.0
2000	$214.0	$38.0	$18.5	$10.9	$11.5	$81.8	$32.6	$51.5	$19.2	$37.8	$5.4	$4.6	$3.3	$5.2	$6.2	$3.2	$12.4	$6.7	$14.8	$27.2	$5.9	$2.4	$2.0
2001	$212.9	$38.5	$18.8	$11.3	$11.5	$80.7	$32.7	$51.4	$19.2	$37.9	$5.3	$4.6	$3.3	$5.2	$6.2	$3.0	$12.6	$6.6	$14.7	$29.0	$5.7	$2.4	$2.1
2002	$216.1	$39.4	$19.3	$11.8	$11.5	$80.6	$32.7	$51.3	$19.7	$38.2	$5.4	$4.6	$3.4	$5.3	$6.3	$2.7	$13.0	$6.7	$15.0	$31.5	$6.0	$2.4	$2.1
2003	$225.9	$41.6	$20.3	$12.9	$11.7	$83.4	$33.4	$52.1	$20.5	$39.2	$5.6	$4.7	$3.5	$5.5	$6.6	$3.0	$13.8	$6.9	$15.5	$35.3	$6.3	$2.5	$2.2
2004	$236.6	$43.4	$21.2	$13.9	$12.1	$86.7	$34.4	$53.3	$21.4	$40.7	$5.8	$4.9	$3.7	$5.8	$7.0	$3.3	$14.4	$7.2	$16.6	$39.4	$6.8	$2.7	$2.4
2005	$243.8	$44.3	$21.9	$14.8	$12.4	$88.3	$34.7	$53.7	$22.0	$41.5	$5.9	$5.0	$3.8	$5.9	$7.2	$3.6	$14.8	$7.3	$17.1	$43.8	$7.1	$2.8	$2.5
2006	$247.2	$44.8	$22.6	$15.8	$12.6	$89.0	$35.0	$55.0	$22.3	$42.0	$6.1	$5.1	$3.9	$6.0	$7.4	$3.8	$15.2	$7.4	$17.6	$48.7	$7.4	$3.0	$2.7
2007	$248.2	$45.7	$23.0	$16.9	$13.0	$89.8	$35.1	$55.9	$22.5	$42.3	$6.2	$5.1	$4.1	$6.0	$7.5	$4.1	$15.5	$7.5	$18.4	$54.9	$7.7	$3.2	$2.8
2008	$246.9	$45.1	$23.2	$17.8	$13.2	$88.6	$34.6	$56.5	$22.6	$42.2	$6.3	$5.1	$4.1	$6.0	$7.5	$4.3	$15.7	$7.6	$19.3	$60.0	$7.7	$3.3	$2.9
2009	$243.3	$44.1	$22.8	$16.8	$13.0	$84.8	$33.4	$54.7	$22.5	$41.9	$6.2	$4.9	$3.8	$6.1	$7.3	$4.5	$16.4	$7.5	$19.6	$66.9	$7.8	$3.4	$2.8
2010	$254.4	$45.7	$23.1	$17.7	$13.4	$89.5	$34.5	$57.6	$23.5	$43.2	$6.4	$5.0	$4.0	$6.2	$7.8	$5.0	$17.1	$7.8	$21.4	$75.0	$8.7	$3.6	$2.9

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$3.0	$1.6	$4.2	$1.6	$1.7	$3.2	$2.9	$0.8	$1.1	$0.6	$9.3	$1.2	$1.2	$3.7	$2.0	$0.4	$4.4	$3.0	$5.1	$3.3	$2.0	$432.1
1981	$2.8	$1.6	$4.3	$1.7	$1.5	$1.9	$3.0	$0.6	$0.9	$0.7	$9.8	$1.2	$1.0	$3.2	$2.0	$0.3	$4.4	$3.1	$5.1	$3.4	$1.9	$424.1
1982	$2.7	$1.6	$4.3	$1.7	$1.7	$1.6	$3.2	$0.6	$0.9	$0.7	$9.6	$1.2	$1.0	$3.0	$2.0	$0.3	$3.8	$3.0	$4.9	$3.4	$1.8	$416.2
1983	$2.6	$1.6	$4.5	$1.8	$1.9	$2.2	$3.5	$0.6	$0.8	$0.7	$8.9	$1.2	$0.9	$3.1	$1.9	$0.3	$3.4	$2.9	$4.8	$3.5	$1.7	$417.3
1984	$2.7	$1.6	$4.7	$1.9	$1.9	$2.2	$3.9	$0.6	$0.7	$0.8	$9.3	$1.3	$0.8	$3.3	$1.9	$0.3	$3.4	$3.0	$5.0	$3.7	$1.7	$438.8
1985	$2.7	$1.6	$4.9	$2.0	$1.9	$1.9	$4.1	$0.6	$0.7	$0.7	$9.4	$1.2	$0.9	$3.4	$1.9	$0.3	$3.2	$2.9	$5.1	$3.8	$1.7	$448.4
1986	$2.7	$1.6	$5.0	$2.1	$1.7	$1.5	$4.5	$0.6	$0.6	$0.7	$8.9	$1.3	$0.9	$3.5	$2.0	$0.3	$3.3	$2.9	$5.1	$4.0	$1.8	$454.2
1987	$2.6	$1.7	$5.2	$2.2	$1.6	$1.5	$5.1	$0.7	$0.5	$0.8	$9.1	$1.3	$0.9	$3.6	$2.1	$0.3	$3.1	$2.9	$5.2	$4.4	$1.9	$469.5
1988	$2.7	$1.6	$5.7	$2.3	$1.5	$1.3	$5.6	$0.6	$0.6	$0.8	$9.1	$1.3	$1.0	$3.7	$2.3	$0.3	$3.4	$3.1	$5.3	$4.5	$2.0	$487.3
1989	$2.8	$1.6	$6.0	$2.5	$1.6	$1.4	$5.9	$0.8	$0.6	$0.9	$9.4	$1.3	$1.1	$3.6	$2.4	$0.3	$3.3	$3.1	$5.5	$4.5	$1.8	$499.7
1990	$2.8	$1.6	$6.3	$2.7	$1.8	$1.0	$6.4	$0.7	$0.6	$1.0	$9.8	$1.2	$1.1	$3.2	$2.5	$0.3	$3.6	$3.1	$5.6	$4.8	$1.9	$501.4
1991	$3.1	$1.5	$6.8	$3.1	$2.2	$0.5	$7.6	$0.4	$0.8	$1.2	$10.9	$1.3	$1.3	$3.2	$2.7	$0.3	$4.2	$3.2	$5.9	$5.2	$2.2	$543.4
1992	$3.5	$1.6	$8.0	$3.7	$2.5	$0.7	$8.9	$0.7	$0.8	$1.4	$12.6	$1.5	$1.5	$3.7	$3.1	$0.3	$4.9	$3.5	$6.6	$6.2	$2.6	$619.4
1993	$3.4	$1.6	$8.4	$4.0	$2.5	$0.5	$9.5	$0.9	$0.8	$1.5	$12.9	$1.6	$1.5	$3.8	$3.0	$0.3	$4.9	$3.6	$6.7	$6.7	$2.6	$630.6
1994	$3.4	$1.6	$8.8	$4.3	$2.5	$0.5	$10.2	$1.0	$0.8	$1.7	$13.3	$1.6	$1.5	$4.0	$3.0	$0.3	$4.9	$3.6	$6.6	$6.2	$2.5	$640.8
1995	$3.5	$1.6	$9.4	$4.6	$2.5	$0.4	$11.0	$1.0	$0.7	$1.8	$12.4	$1.7	$1.5	$4.2	$3.1	$0.3	$4.8	$3.7	$6.6	$6.6	$2.6	$652.8
1996	$3.5	$1.6	$10.0	$4.9	$2.7	$0.4	$11.7	$1.0	$0.7	$2.0	$12.9	$1.7	$1.6	$4.4	$3.2	$0.4	$5.0	$3.9	$6.6	$7.0	$2.6	$668.8
1997	$3.6	$1.6	$10.1	$5.0	$2.7	$0.5	$12.0	$1.0	$0.7	$2.1	$13.4	$1.7	$1.5	$4.6	$3.3	$0.5	$4.9	$3.8	$6.5	$7.3	$2.6	$673.6
1998	$3.6	$1.6	$10.5	$4.2	$2.7	$0.7	$11.1	$1.0	$0.7	$1.9	$13.7	$1.7	$1.5	$4.7	$3.3	$0.5	$4.9	$3.8	$6.5	$7.4	$2.6	$673.8
1999	$3.6	$1.7	$11.1	$4.2	$2.7	$0.9	$12.1	$1.0	$0.7	$1.9	$14.0	$1.8	$1.5	$4.8	$3.4	$0.5	$4.8	$3.8	$6.5	$7.0	$2.4	$685.9
2000	$3.8	$1.7	$11.4	$4.4	$2.8	$0.8	$13.0	$1.0	$0.7	$2.1	$14.8	$1.8	$1.6	$5.0	$3.5	$0.6	$5.0	$3.9	$6.7	$7.4	$2.5	$709.6
2001	$3.9	$1.8	$11.8	$4.4	$2.9	$0.8	$13.3	$1.0	$0.6	$2.1	$14.5	$1.8	$1.6	$5.0	$3.5	$0.6	$5.0	$4.0	$6.7	$6.9	$2.5	$710.4
2002	$4.0	$1.8	$12.2	$4.6	$3.1	$0.7	$14.2	$1.1	$0.6	$2.2	$14.6	$1.9	$1.6	$5.0	$3.6	$0.6	$5.0	$4.1	$6.7	$7.3	$2.3	$722.3
2003	$4.3	$1.9	$13.5	$4.9	$3.3	$0.4	$14.9	$1.3	$0.7	$2.4	$15.1	$2.0	$1.8	$5.3	$3.6	$0.6	$5.4	$4.3	$6.8	$7.8	$2.1	$755.1
2004	$4.6	$2.1	$14.8	$5.3	$3.6	$0.6	$15.8	$1.4	$0.8	$2.5	$15.9	$2.1	$2.1	$5.7	$3.7	$0.8	$5.8	$4.6	$7.0	$8.6	$2.6	$793.8
2005	$4.7	$2.1	$16.2	$5.5	$3.7	$0.6	$16.4	$1.6	$0.9	$2.7	$16.4	$2.2	$2.2	$5.9	$3.7	$0.8	$6.1	$4.8	$7.2	$9.4	$2.8	$820.2
2006	$4.9	$2.2	$17.5	$5.8	$3.9	$0.6	$17.0	$1.6	$0.9	$2.8	$17.0	$2.2	$2.3	$6.2	$3.7	$1.0	$6.2	$5.0	$7.4	$9.9	$3.1	$841.7
2007	$4.9	$2.2	$18.9	$6.1	$4.1	$0.6	$17.6	$1.7	$0.9	$2.9	$17.4	$2.2	$2.4	$6.5	$3.8	$1.2	$6.3	$5.2	$7.6	$10.2	$3.3	$861.4
2008	$4.9	$2.2	$19.8	$6.4	$4.2	$0.7	$18.0	$1.8	$1.0	$3.1	$17.5	$2.2	$2.5	$6.8	$3.8	$1.5	$6.5	$5.4	$7.7	$10.3	$3.5	$870.1
2009	$4.9	$2.1	$22.1	$6.8	$4.4	$0.7	$18.5	$1.7	$1.0	$3.1	$16.8	$2.3	$2.8	$7.1	$3.7	$1.7	$6.7	$5.4	$7.7	$10.0	$3.4	$867.1
2010	$4.8	$2.1	$24.4	$7.4	$4.5	$0.8	$19.9	$1.8	$1.1	$3.4	$18.0	$2.4	$3.0	$7.5	$3.8	$2.0	$7.0	$5.6	$8.0	$11.0	$3.4	$915.1

Table 19. GDP Tax $fGDP_{e+CO2}$, 3% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	12%	9%	8%	35%	11%	9%	7%	15%	13%	9%	10%	7%	10%	8%	11%	16%	8%	10%	10%	44%	17%	12%	12%
1981	12%	8%	8%	33%	11%	8%	7%	13%	12%	8%	8%	7%	9%	7%	10%	15%	8%	9%	10%	38%	14%	11%	12%
1982	11%	8%	7%	28%	10%	7%	6%	12%	11%	7%	7%	6%	8%	7%	9%	14%	8%	9%	9%	32%	12%	10%	11%
1983	10%	7%	6%	22%	9%	7%	6%	11%	10%	6%	6%	5%	7%	6%	7%	13%	7%	8%	8%	27%	11%	8%	9%
1984	9%	6%	6%	22%	8%	6%	6%	10%	10%	6%	6%	5%	6%	6%	7%	12%	7%	7%	8%	23%	9%	8%	9%
1985	8%	6%	5%	21%	8%	6%	5%	10%	9%	6%	6%	5%	6%	6%	7%	12%	6%	7%	8%	20%	9%	8%	9%
1986	6%	5%	4%	15%	6%	5%	4%	10%	7%	6%	6%	4%	5%	6%	6%	9%	5%	6%	6%	16%	6%	7%	7%
1987	6%	5%	5%	17%	6%	6%	4%	11%	8%	6%	6%	4%	6%	6%	7%	10%	5%	7%	7%	17%	6%	7%	9%
1988	6%	5%	5%	16%	5%	5%	4%	11%	7%	5%	6%	4%	5%	6%	6%	9%	5%	6%	7%	15%	6%	7%	7%
1989	6%	5%	5%	17%	5%	5%	4%	10%	8%	5%	5%	4%	5%	6%	6%	10%	5%	6%	8%	14%	6%	7%	7%
1990	6%	5%	5%	15%	6%	5%	5%	10%	8%	6%	6%	4%	5%	6%	7%	11%	5%	6%	9%	19%	7%	7%	7%
1991	6%	5%	5%	15%	6%	5%	5%	8%	8%	6%	6%	4%	5%	6%	7%	9%	5%	6%	8%	14%	6%	7%	7%
1992	6%	6%	5%	15%	7%	5%	5%	8%	8%	6%	6%	4%	7%	7%	8%	9%	5%	6%	8%	20%	7%	7%	7%
1993	6%	5%	5%	11%	6%	6%	4%	7%	7%	6%	6%	4%	7%	7%	6%	8%	5%	6%	7%	18%	7%	7%	6%
1994	5%	5%	5%	11%	6%	6%	4%	7%	7%	5%	5%	4%	6%	6%	6%	8%	5%	6%	8%	10%	6%	7%	6%
1995	5%	5%	5%	15%	6%	6%	4%	7%	7%	6%	6%	4%	7%	7%	6%	9%	5%	6%	7%	10%	6%	7%	7%
1996	6%	5%	5%	11%	6%	6%	5%	6%	7%	6%	6%	4%	7%	7%	7%	10%	5%	6%	7%	10%	6%	7%	7%
1997	5%	4%	5%	9%	5%	5%	4%	5%	7%	5%	5%	4%	6%	6%	5%	9%	4%	6%	7%	10%	6%	6%	6%
1998	5%	4%	4%	8%	4%	5%	4%	5%	6%	5%	5%	4%	5%	6%	6%	7%	4%	5%	7%	8%	5%	5%	6%
1999	5%	4%	4%	9%	4%	5%	4%	4%	6%	5%	5%	3%	5%	6%	6%	8%	4%	5%	7%	8%	5%	6%	6%
2000	6%	4%	5%	9%	5%	6%	4%	5%	7%	5%	5%	4%	4%	4%	5%	10%	5%	6%	8%	9%	7%	6%	6%
2001	5%	4%	4%	8%	5%	5%	4%	5%	6%	5%	4%	4%	4%	4%	6%	9%	4%	5%	7%	8%	6%	6%	6%
2002	5%	4%	4%	8%	5%	5%	4%	5%	6%	5%	5%	4%	4%	4%	6%	9%	4%	6%	7%	8%	6%	6%	6%
2003	5%	4%	5%	8%	6%	5%	5%	5%	7%	5%	5%	4%	5%	5%	7%	11%	5%	7%	7%	9%	6%	6%	9%
2004	6%	4%	5%	11%	6%	5%	5%	6%	8%	5%	6%	5%	5%	5%	7%	13%	5%	7%	8%	12%	7%	7%	10%
2005	7%	5%	6%	14%	7%	6%	6%	7%	9%	6%	7%	5%	6%	6%	7%	15%	5%	8%	9%	13%	8%	8%	11%
2006	7%	5%	7%	15%	8%	6%	6%	7%	9%	6%	7%	5%	7%	6%	7%	15%	5%	9%	10%	14%	8%	9%	12%
2007	7%	5%	7%	15%	8%	6%	6%	7%	9%	7%	7%	5%	6%	6%	7%	16%	6%	9%	10%	15%	8%	9%	11%
2008	8%	6%	8%	18%	10%	7%	8%	9%	11%	8%	9%	7%	8%	7%	8%	18%	7%	11%	12%	19%	10%	11%	14%
2009	6%	5%	7%	15%	8%	6%	7%	7%	8%	7%	7%	5%	7%	6%	7%	13%	5%	9%	10%	14%	7%	8%	12%
2010	7%	5%	8%	17%	8%	7%	7%	7%	9%	7%	7%	6%	7%	8%	8%	13%	5%	10%	11%	15%	8%	9%	13%

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	9%	13%	13%	14%	23%	5%	13%	17%	8%	17%	9%	8%	10%	15%	7%	4%	11%	8%	7%	8%	19%	12%
1981	7%	12%	13%	14%	20%	7%	12%	16%	9%	16%	8%	8%	10%	15%	7%	4%	10%	7%	6%	8%	15%	11%
1982	7%	11%	12%	12%	18%	7%	10%	18%	8%	14%	7%	7%	10%	17%	7%	5%	11%	7%	6%	8%	13%	10%
1983	6%	9%	11%	10%	15%	6%	9%	15%	9%	13%	6%	7%	10%	14%	6%	5%	11%	6%	6%	7%	12%	9%
1984	5%	9%	11%	9%	16%	5%	9%	13%	9%	12%	7%	6%	9%	13%	6%	5%	10%	6%	5%	6%	11%	9%
1985	5%	9%	10%	9%	15%	6%	8%	15%	9%	12%	6%	5%	8%	12%	6%	6%	10%	5%	5%	6%	11%	8%
1986	4%	7%	8%	6%	11%	5%	6%	8%	5%	8%	4%	5%	5%	12%	5%	5%	6%	4%	5%	5%	7%	7%
1987	4%	8%	9%	7%	12%	5%	7%	11%	8%	9%	5%	5%	6%	14%	5%	5%	7%	5%	5%	5%	9%	7%
1988	4%	7%	8%	6%	12%	5%	7%	11%	5%	8%	5%	5%	5%	13%	5%	5%	6%	4%	5%	5%	7%	7%
1989	4%	7%	8%	7%	13%	6%	7%	12%	6%	8%	5%	5%	6%	11%	4%	5%	6%	4%	5%	5%	8%	7%
1990	5%	7%	10%	8%	14%	9%	7%	7%	6%	9%	6%	6%	6%	10%	5%	5%	6%	5%	5%	5%	9%	7%
1991	5%	7%	10%	7%	12%	12%	7%	4%	6%	8%	5%	6%	6%	11%	5%	5%	6%	5%	5%	5%	7%	6%
1992	5%	7%	10%	7%	12%	15%	7%	5%	6%	8%	5%	6%	6%	11%	4%	5%	6%	5%	5%	5%	8%	7%
1993	4%	7%	8%	7%	10%	22%	7%	5%	5%	7%	5%	6%	5%	11%	4%	3%	6%	4%	5%	5%	7%	6%
1994	4%	7%	8%	6%	11%	22%	7%	5%	6%	7%	5%	6%	4%	10%	4%	5%	6%	4%	5%	5%	7%	6%
1995	5%	7%	8%	6%	11%	23%	7%	6%	7%	7%	5%	6%	4%	10%	4%	5%	6%	5%	6%	5%	8%	6%
1996	5%	7%	8%	7%	12%	26%	8%	7%	8%	8%	5%	7%	5%	10%	5%	6%	7%	5%	6%	6%	8%	6%
1997	5%	7%	8%	7%	11%	23%	8%	6%	7%	7%	5%	6%	5%	9%	4%	3%	5%	4%	5%	5%	6%	6%
1998	4%	6%	7%	5%	8%	9%	6%	4%	6%	5%	4%	5%	4%	7%	4%	3%	4%	4%	5%	5%	5%	5%
1999	4%	6%	7%	7%	9%	9%	7%	7%	7%	7%	4%	5%	4%	7%	4%	4%	6%	4%	5%	5%	6%	5%
2000	5%	6%	8%	9%	12%	14%	9%	9%	10%	8%	5%	5%	6%	7%	5%	4%	8%	4%	4%	5%	8%	6%
2001	4%	6%	7%	9%	11%	13%	8%	8%	9%	7%	5%	5%	6%	6%	4%	4%	7%	4%	4%	5%	7%	5%
2002	4%	7%	7%	9%	10%	15%	7%	9%	10%	7%	5%	5%	6%	6%	4%	4%	7%	4%	4%	5%	8%	5%
2003	5%	7%	8%	9%	12%	25%	8%	9%	10%	8%	5%	6%	6%	7%	5%	4%	8%	5%	5%	6%	9%	6%
2004	5%	8%	9%	11%	15%	25%	7%	11%	12%	10%	7%	7%	7%	8%	5%	5%	10%	5%	5%	6%	10%	7%
2005	6%	10%	10%	13%	25%	32%	9%	15%	14%	12%	8%	7%	8%	9%	6%	7%	13%	6%	5%	7%	10%	7%
2006	7%	11%	11%	13%	29%	29%	9%	18%	15%	13%	9%	8%	7%	9%	6%	7%	15%	7%	5%	7%	14%	8%
2007	7%	12%	11%	14%	30%	32%	10%	19%	16%	14%	9%	8%	7%	9%	7%	7%	16%	9%	5%	8%	15%	8%
2008	9%	15%	13%	17%	35%	47%	11%	24%	21%	17%	11%	9%	8%	11%	8%	8%	21%	10%	6%	10%	21%	10%
2009	6%	12%	10%	12%	26%	37%	8%	18%	15%	12%	8%	7%	6%	9%	7%	6%	15%	8%	5%	8%	15%	8%
2010	7%	14%	13%	14%	31%	55%	11%	23%	19%	15%	9%	8%	7%	10%	8%	9%	20%	8%	6%	9%	21%	9%

Table 20. GDP Tax 2005$ U.S. Billions, 2.5% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	$184.9	$36.1	$17.5	$31.4	$11.2	$76.9	$36.5	$56.2	$18.1	$41.0	$5.5	$4.9	$3.3	$4.7	$6.8
1981	$183.6	$34.5	$16.9	$31.1	$10.8	$77.6	$35.6	$54.7	$18.2	$40.0	$5.3	$4.7	$3.2	$4.6	$6.5
1982	$176.1	$34.6	$16.7	$31.3	$10.4	$78.5	$35.0	$53.3	$17.3	$40.1	$5.3	$4.7	$3.3	$4.5	$6.5
1983	$179.3	$34.9	$16.6	$31.4	$10.3	$78.8	$34.5	$52.7	$17.3	$39.6	$5.3	$4.7	$3.3	$4.6	$6.4
1984	$193.4	$36.1	$17.0	$32.1	$10.7	$82.9	$35.9	$54.6	$18.4	$40.4	$5.4	$5.0	$3.4	$4.9	$6.7
1985	$198.6	$36.9	$17.1	$32.0	$10.9	$86.9	$36.4	$55.1	$19.0	$40.5	$5.4	$5.1	$3.5	$5.1	$6.8
1986	$201.6	$37.6	$17.4	$32.7	$11.0	$87.7	$36.7	$55.3	$19.1	$40.7	$5.5	$5.3	$3.5	$5.2	$6.9
1987	$208.1	$39.4	$18.3	$33.2	$11.2	$91.4	$37.9	$56.1	$19.9	$41.7	$5.5	$5.3	$3.6	$5.3	$7.1
1988	$215.4	$41.1	$19.2	$33.5	$11.5	$97.3	$39.3	$57.8	$20.8	$43.3	$5.7	$5.2	$3.8	$5.3	$7.3
1989	$220.5	$41.6	$19.9	$34.0	$11.9	$101.4	$40.1	$59.4	$21.1	$44.6	$5.8	$5.2	$3.9	$5.2	$7.4
1990	$222.4	$41.5	$20.4	$23.5	$12.2	$106.0	$40.5	$61.9	$20.9	$45.4	$6.0	$5.2	$3.9	$5.3	$7.4
1991	$237.3	$43.8	$22.4	$23.9	$13.4	$117.2	$44.0	$69.6	$21.9	$49.0	$6.7	$5.7	$3.9	$5.8	$7.8
1992	$274.3	$49.0	$25.3	$22.8	$15.2	$132.0	$49.6	$79.3	$24.7	$55.6	$7.6	$6.5	$4.2	$6.8	$8.6
1993	$282.8	$50.2	$25.1	$20.9	$15.5	$132.5	$49.3	$78.7	$25.4	$55.4	$7.7	$6.5	$4.2	$7.0	$8.5
1994	$290.1	$51.6	$25.3	$18.0	$15.7	$131.7	$49.6	$79.4	$26.2	$55.8	$7.7	$6.7	$4.3	$7.2	$8.7
1995	$295.0	$52.7	$25.8	$17.1	$16.0	$133.1	$50.6	$80.1	$26.7	$56.4	$7.9	$6.9	$4.4	$7.4	$8.9
1996	$304.2	$53.9	$26.2	$16.4	$16.5	$135.7	$50.9	$80.2	$27.0	$56.7	$8.0	$7.0	$4.6	$7.8	$9.0
1997	$308.3	$55.5	$26.4	$16.1	$16.7	$133.6	$50.2	$79.1	$27.3	$56.2	$7.9	$7.0	$4.7	$7.9	$9.0
1998	$314.0	$56.2	$26.9	$14.9	$16.9	$127.7	$49.7	$78.6	$27.7	$56.6	$8.0	$7.0	$4.8	$8.0	$9.1
1999	$324.0	$57.3	$27.7	$15.6	$17.4	$125.5	$49.6	$78.8	$28.7	$57.6	$8.2	$7.1	$4.9	$8.0	$9.4
2000	$334.8	$59.4	$28.9	$17.0	$17.9	$128.0	$51.0	$80.6	$30.0	$59.2	$8.4	$7.3	$5.2	$8.2	$9.7
2001	$333.0	$60.3	$29.5	$17.6	$18.0	$126.2	$51.1	$80.5	$30.0	$59.3	$8.4	$7.2	$5.2	$8.2	$9.7
2002	$338.0	$61.7	$30.2	$18.4	$17.9	$126.1	$51.2	$80.2	$30.8	$59.7	$8.5	$7.2	$5.3	$8.3	$9.9
2003	$353.3	$65.1	$31.7	$20.1	$18.4	$130.4	$52.2	$81.5	$32.0	$61.4	$8.7	$7.4	$5.5	$8.6	$10.3
2004	$370.1	$67.8	$33.1	$21.8	$19.0	$135.6	$53.7	$83.4	$33.4	$63.7	$9.0	$7.6	$5.8	$9.0	$10.9
2005	$381.3	$69.2	$34.3	$23.2	$19.4	$138.2	$54.2	$84.0	$34.4	$64.8	$9.3	$7.8	$5.9	$9.2	$11.2
2006	$386.6	$70.1	$35.3	$24.8	$19.8	$139.2	$54.7	$86.0	$34.9	$65.6	$9.5	$8.0	$6.1	$9.3	$11.6
2007	$388.3	$71.5	$36.0	$26.5	$20.3	$140.4	$54.8	$87.5	$35.2	$66.1	$9.7	$8.0	$6.4	$9.4	$11.8
2008	$386.2	$70.6	$36.2	$27.8	$20.6	$138.6	$54.1	$88.3	$35.4	$66.0	$9.8	$7.9	$6.4	$9.4	$11.7
2009	$380.6	$69.0	$35.6	$26.2	$20.3	$132.7	$52.2	$85.6	$35.1	$65.6	$9.6	$7.6	$6.0	$9.5	$11.4
2010	$397.8	$71.4	$36.1	$27.7	$20.9	$139.9	$54.0	$90.0	$36.8	$67.5	$10.0	$7.8	$6.3	$9.7	$12.2

T20PART2

Table 21. GDP Tax $fGDP_{e+CO2}$, 2.5% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	13%	10%	9%	37%	12%	10%	9%	16%	14%	10%	11%	9%	11%	9%	12%
1981	13%	10%	9%	34%	12%	9%	8%	14%	13%	9%	10%	8%	10%	8%	11%
1982	12%	9%	8%	29%	11%	8%	8%	13%	12%	8%	8%	7%	9%	8%	10%
1983	11%	8%	7%	23%	10%	8%	7%	12%	11%	8%	7%	6%	8%	7%	8%
1984	10%	7%	7%	23%	9%	8%	7%	11%	11%	7%	7%	6%	7%	7%	8%
1985	9%	7%	7%	22%	9%	7%	6%	11%	10%	7%	7%	6%	7%	7%	8%
1986	7%	6%	5%	16%	7%	6%	5%	11%	8%	7%	7%	5%	6%	7%	7%
1987	7%	6%	6%	18%	7%	7%	5%	12%	9%	7%	7%	5%	7%	7%	8%
1988	7%	6%	6%	17%	6%	6%	5%	12%	8%	6%	7%	5%	6%	7%	8%
1989	7%	6%	6%	18%	6%	6%	5%	11%	9%	6%	6%	5%	6%	7%	7%
1990	7%	6%	6%	16%	7%	6%	6%	11%	9%	7%	7%	5%	6%	7%	8%
1991	7%	6%	6%	16%	7%	6%	6%	9%	9%	7%	7%	5%	6%	7%	9%
1992	7%	7%	6%	16%	8%	7%	6%	9%	9%	7%	7%	5%	8%	9%	9%
1993	7%	6%	6%	12%	7%	7%	6%	9%	9%	7%	7%	5%	8%	8%	7%
1994	7%	6%	6%	13%	7%	7%	6%	8%	8%	7%	7%	5%	8%	8%	7%
1995	6%	6%	6%	16%	7%	7%	6%	8%	8%	7%	7%	5%	8%	8%	7%
1996	7%	6%	6%	12%	7%	7%	6%	7%	8%	7%	7%	6%	8%	8%	8%
1997	6%	5%	6%	10%	6%	7%	6%	6%	8%	6%	6%	5%	7%	7%	7%
1998	6%	5%	5%	9%	5%	6%	5%	6%	7%	6%	6%	5%	7%	7%	7%
1999	6%	5%	5%	10%	5%	7%	5%	6%	7%	6%	6%	5%	6%	7%	7%
2000	7%	5%	6%	10%	7%	7%	5%	6%	8%	6%	6%	5%	5%	5%	7%
2001	6%	5%	5%	9%	6%	6%	5%	6%	7%	6%	6%	5%	5%	5%	7%
2002	6%	5%	5%	9%	6%	6%	5%	6%	7%	6%	6%	5%	5%	6%	7%
2003	7%	5%	6%	9%	7%	6%	6%	6%	8%	6%	6%	5%	6%	7%	8%
2004	7%	5%	6%	12%	7%	7%	6%	7%	9%	7%	7%	6%	7%	7%	8%
2005	8%	6%	7%	15%	9%	7%	7%	8%	10%	7%	8%	6%	7%	7%	8%
2006	8%	7%	8%	16%	9%	7%	7%	8%	10%	7%	8%	6%	8%	7%	8%
2007	8%	6%	8%	16%	9%	7%	7%	8%	10%	8%	8%	7%	8%	7%	8%
2008	9%	7%	9%	19%	11%	8%	9%	10%	12%	9%	10%	8%	9%	8%	9%
2009	7%	6%	8%	16%	9%	7%	8%	8%	9%	8%	8%	6%	8%	7%	8%
2010	8%	7%	9%	18%	9%	8%	8%	9%	10%	8%	9%	7%	8%	9%	9%

Year	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea
1980	17%	10%	11%	12%	46%	18%	13%	13%	10%	14%	15%	16%	24%	6%	14%
1981	16%	9%	10%	11%	39%	15%	12%	13%	8%	13%	14%	15%	21%	8%	13%
1982	15%	9%	10%	10%	33%	13%	11%	12%	8%	12%	13%	13%	19%	8%	12%
1983	14%	8%	9%	9%	28%	12%	10%	10%	7%	10%	12%	11%	16%	7%	10%
1984	13%	8%	8%	9%	24%	11%	9%	10%	6%	10%	12%	11%	17%	6%	10%
1985	13%	7%	8%	9%	21%	10%	9%	10%	6%	10%	11%	10%	17%	7%	9%
1986	10%	6%	7%	7%	17%	7%	8%	8%	5%	8%	9%	7%	12%	6%	7%
1987	11%	6%	8%	8%	18%	7%	8%	10%	5%	9%	10%	8%	13%	6%	8%
1988	10%	6%	7%	8%	16%	7%	8%	8%	5%	8%	9%	7%	13%	6%	8%
1989	11%	6%	7%	9%	15%	7%	8%	8%	5%	8%	9%	8%	14%	7%	8%
1990	12%	6%	7%	10%	20%	8%	8%	8%	6%	8%	11%	9%	15%	10%	8%
1991	10%	6%	7%	9%	15%	8%	8%	8%	6%	8%	11%	8%	14%	13%	8%
1992	10%	6%	8%	9%	21%	8%	8%	8%	6%	8%	11%	8%	13%	16%	8%
1993	10%	6%	7%	8%	19%	8%	8%	8%	6%	8%	9%	8%	12%	23%	8%
1994	10%	6%	7%	9%	11%	7%	8%	7%	5%	8%	9%	7%	12%	23%	8%
1995	10%	6%	7%	8%	12%	7%	8%	8%	6%	8%	9%	8%	12%	25%	8%
1996	11%	6%	8%	9%	11%	7%	8%	8%	6%	8%	9%	8%	13%	27%	9%
1997	10%	6%	7%	8%	11%	7%	7%	7%	6%	8%	9%	8%	12%	24%	9%
1998	8%	5%	6%	8%	10%	6%	7%	7%	5%	7%	8%	6%	9%	11%	7%
1999	9%	5%	6%	8%	9%	7%	7%	7%	5%	7%	8%	8%	10%	10%	8%
2000	11%	6%	7%	9%	10%	8%	8%	7%	6%	8%	10%	10%	14%	15%	10%
2001	10%	5%	7%	8%	9%	7%	7%	7%	5%	7%	8%	10%	12%	14%	9%
2002	10%	5%	7%	8%	9%	7%	7%	7%	5%	8%	8%	10%	12%	16%	8%
2003	12%	6%	8%	9%	10%	7%	7%	10%	6%	8%	9%	10%	13%	26%	9%
2004	14%	6%	8%	9%	13%	8%	8%	12%	6%	9%	10%	12%	16%	26%	9%
2005	16%	6%	9%	11%	15%	9%	9%	12%	7%	11%	11%	15%	26%	34%	10%
2006	16%	6%	10%	11%	15%	9%	10%	13%	8%	12%	12%	14%	30%	30%	11%
2007	17%	7%	10%	11%	16%	9%	10%	12%	8%	13%	12%	15%	31%	33%	11%
2008	19%	8%	13%	13%	20%	11%	12%	15%	10%	16%	14%	18%	36%	48%	12%
2009	14%	6%	10%	11%	15%	8%	9%	13%	8%	14%	11%	13%	27%	38%	10%
2010	15%	6%	11%	12%	16%	9%	10%	14%	9%	15%	14%	15%	32%	56%	12%

Year	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World 44
1980	18%	9%	18%	10%	9%	11%	17%	8%	5%	12%	9%	8%	9%	20%	13%
1981	17%	10%	17%	9%	9%	11%	16%	8%	6%	11%	9%	7%	9%	16%	13%
1982	19%	9%	15%	8%	8%	11%	18%	8%	6%	12%	8%	7%	9%	14%	11%
1983	16%	10%	14%	7%	8%	11%	15%	7%	6%	12%	7%	7%	8%	13%	10%
1984	14%	10%	13%	8%	7%	10%	14%	7%	6%	11%	7%	6%	7%	12%	10%
1985	16%	10%	13%	7%	6%	9%	13%	7%	7%	11%	6%	6%	7%	12%	9%
1986	9%	6%	9%	5%	6%	6%	13%	6%	6%	7%	5%	6%	6%	8%	8%
1987	13%	9%	10%	6%	6%	7%	15%	6%	6%	8%	6%	6%	6%	10%	8%
1988	12%	6%	9%	6%	6%	6%	14%	6%	6%	7%	5%	6%	6%	8%	8%
1989	13%	7%	9%	6%	6%	7%	12%	5%	6%	7%	5%	6%	6%	9%	8%
1990	8%	7%	10%	7%	7%	7%	11%	6%	6%	7%	6%	6%	6%	10%	8%
1991	5%	7%	10%	6%	7%	7%	12%	6%	6%	7%	6%	6%	6%	8%	8%
1992	6%	7%	9%	6%	7%	7%	12%	6%	6%	8%	6%	7%	7%	9%	8%
1993	6%	6%	8%	6%	7%	6%	12%	6%	4%	7%	6%	6%	7%	8%	7%
1994	7%	7%	8%	6%	7%	6%	11%	6%	6%	7%	5%	6%	6%	8%	7%
1995	7%	9%	9%	6%	8%	6%	12%	6%	6%	7%	6%	7%	6%	9%	7%
1996	8%	9%	9%	6%	8%	6%	12%	6%	7%	8%	6%	7%	7%	9%	7%
1997	7%	8%	8%	6%	7%	6%	10%	6%	5%	7%	5%	6%	6%	7%	7%
1998	5%	7%	7%	5%	6%	5%	8%	5%	4%	5%	5%	6%	6%	6%	6%
1999	8%	8%	8%	5%	6%	6%	8%	5%	5%	7%	5%	6%	6%	7%	6%
2000	10%	11%	9%	6%	6%	7%	8%	6%	5%	9%	5%	6%	6%	9%	7%
2001	9%	10%	9%	6%	6%	7%	7%	5%	5%	8%	5%	6%	6%	8%	6%
2002	10%	11%	8%	6%	6%	7%	8%	5%	5%	8%	5%	5%	6%	9%	6%
2003	10%	11%	9%	6%	7%	8%	8%	6%	5%	9%	6%	6%	7%	10%	7%
2004	12%	13%	11%	8%	8%	8%	9%	6%	6%	11%	6%	6%	7%	11%	8%
2005	16%	15%	13%	9%	8%	9%	10%	7%	8%	14%	7%	6%	8%	11%	9%
2006	19%	16%	14%	10%	9%	8%	10%	7%	8%	16%	8%	6%	8%	15%	9%
2007	20%	17%	15%	10%	9%	8%	10%	8%	8%	17%	10%	6%	9%	16%	9%
2008	25%	22%	18%	12%	10%	9%	12%	9%	9%	23%	11%	7%	11%	22%	11%
2009	19%	16%	14%	9%	8%	7%	10%	8%	7%	16%	9%	6%	9%	16%	9%
2010	24%	20%	16%	10%	9%	8%	11%	9%	10%	21%	10%	7%	10%	22%	10%

Table 22. GDP Tax 2005$ U.S. Billions, Nordhaus SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$40.6	$7.9	$3.8	$6.9	$2.5	$16.9	$8.0	$12.3	$4.0	$9.0	$1.2	$1.1	$0.7	$1.0	$1.5	$0.9	$2.3	$1.6	$3.6	$1.5	$0.6	$0.5	$0.6	$1.0	$0.5	$1.4	$0.6	$0.6	$1.1	$1.0	$0.3	$0.4	$0.2	$3.2	$0.4	$0.4	$1.3	$0.7	$0.1	$1.5	$1.0	$1.8	$1.1	$0.7	$148.4
1981	$40.3	$7.6	$3.7	$6.8	$2.4	$17.0	$7.8	$12.0	$4.0	$8.8	$1.2	$1.0	$0.7	$1.0	$1.4	$0.8	$2.3	$1.6	$3.3	$1.5	$0.6	$0.5	$0.6	$1.0	$0.5	$1.5	$0.6	$0.5	$0.6	$1.0	$0.2	$0.3	$0.2	$3.4	$0.4	$0.3	$1.1	$0.7	$0.1	$1.5	$1.1	$1.7	$1.2	$0.6	$145.7
1982	$38.7	$7.6	$3.7	$6.9	$2.3	$17.2	$7.7	$11.7	$3.8	$8.8	$1.2	$1.0	$0.7	$1.0	$1.4	$0.7	$2.2	$1.5	$3.3	$1.6	$0.6	$0.5	$0.6	$0.9	$0.5	$1.5	$0.6	$0.6	$0.6	$1.1	$0.2	$0.3	$0.2	$3.3	$0.4	$0.3	$1.0	$0.7	$0.1	$1.3	$1.0	$1.7	$1.2	$0.6	$142.9
1983	$39.4	$7.7	$3.6	$6.9	$2.3	$17.3	$7.6	$11.6	$3.8	$8.7	$1.2	$1.0	$0.7	$1.0	$1.4	$0.7	$2.3	$1.5	$3.1	$1.8	$0.6	$0.4	$0.6	$0.9	$0.5	$1.6	$0.6	$0.6	$0.8	$1.2	$0.2	$0.3	$0.2	$3.1	$0.4	$0.3	$1.1	$0.7	$0.1	$1.2	$1.0	$1.6	$1.2	$0.6	$143.3
1984	$42.5	$7.9	$3.7	$7.0	$2.4	$18.2	$7.9	$12.0	$4.0	$8.9	$1.2	$1.1	$0.7	$1.1	$1.5	$0.8	$2.4	$1.5	$3.3	$2.1	$0.7	$0.5	$0.6	$0.9	$0.6	$1.6	$0.7	$0.6	$0.8	$1.3	$0.2	$0.3	$0.3	$3.2	$0.4	$0.3	$1.1	$0.7	$0.1	$1.2	$1.0	$1.7	$1.3	$0.6	$150.7
1985	$43.6	$8.1	$3.8	$7.0	$2.4	$19.1	$8.0	$12.1	$4.2	$8.9	$1.2	$1.1	$0.8	$1.1	$1.5	$0.7	$2.5	$1.5	$3.5	$2.3	$0.7	$0.5	$0.6	$0.9	$0.5	$1.7	$0.7	$0.6	$0.7	$1.4	$0.2	$0.3	$0.3	$3.2	$0.4	$0.3	$1.2	$0.7	$0.1	$1.1	$1.0	$1.7	$1.3	$0.6	$154.0
1986	$44.3	$8.3	$3.8	$7.2	$2.4	$19.3	$8.1	$12.1	$4.2	$8.9	$1.2	$1.2	$0.8	$1.1	$1.5	$0.7	$2.5	$1.5	$3.7	$2.5	$0.8	$0.5	$0.6	$0.9	$0.5	$1.7	$0.7	$0.6	$0.5	$1.6	$0.2	$0.2	$0.3	$3.1	$0.4	$0.3	$1.2	$0.7	$0.1	$1.1	$1.0	$1.7	$1.4	$0.6	$156.0
1987	$45.7	$8.6	$4.0	$7.3	$2.5	$20.1	$8.3	$12.3	$4.4	$9.1	$1.2	$1.2	$0.8	$1.2	$1.6	$0.8	$2.6	$1.6	$3.8	$2.8	$0.8	$0.5	$0.6	$0.9	$0.6	$1.8	$0.7	$0.6	$0.5	$1.7	$0.2	$0.2	$0.3	$3.1	$0.4	$0.3	$1.2	$0.7	$0.1	$1.1	$1.0	$1.8	$1.5	$0.6	$161.3
1988	$47.3	$9.0	$4.2	$7.4	$2.5	$21.4	$8.6	$12.7	$4.6	$9.5	$1.2	$1.1	$0.8	$1.2	$1.6	$0.7	$2.7	$1.6	$3.8	$3.0	$0.9	$0.5	$0.6	$0.9	$0.6	$2.0	$0.8	$0.5	$0.5	$1.9	$0.2	$0.2	$0.3	$3.1	$0.4	$0.3	$1.3	$0.8	$0.1	$1.2	$1.0	$1.8	$1.5	$0.7	$167.4
1989	$48.4	$9.1	$4.4	$7.5	$2.6	$22.3	$8.8	$13.0	$4.6	$9.8	$1.3	$1.1	$0.9	$1.2	$1.6	$0.7	$2.8	$1.7	$3.9	$3.1	$1.0	$0.6	$0.6	$1.0	$0.6	$2.1	$0.9	$0.6	$0.5	$2.0	$0.3	$0.2	$0.3	$3.2	$0.4	$0.4	$1.3	$0.8	$0.1	$1.1	$1.1	$1.9	$1.5	$0.6	$171.6
1990	$48.8	$9.1	$4.5	$5.2	$2.7	$23.3	$8.9	$13.6	$4.6	$10.0	$1.3	$1.1	$0.9	$1.2	$1.6	$0.7	$2.8	$1.7	$3.7	$3.2	$1.0	$0.6	$0.6	$1.0	$0.5	$2.1	$0.9	$0.6	$0.3	$2.2	$0.2	$0.2	$0.3	$3.4	$0.4	$0.4	$1.1	$0.8	$0.1	$1.2	$1.0	$1.9	$1.7	$0.6	$172.2
1991	$52.1	$9.6	$4.9	$5.3	$2.9	$25.7	$9.7	$15.3	$4.8	$10.8	$1.5	$1.2	$0.9	$1.3	$1.7	$0.8	$3.0	$1.9	$4.0	$3.8	$1.2	$0.6	$0.6	$1.1	$0.5	$2.3	$1.1	$0.8	$0.2	$2.6	$0.1	$0.3	$0.4	$3.7	$0.5	$0.4	$1.1	$0.9	$0.1	$1.4	$1.1	$2.0	$1.8	$0.8	$186.7
1992	$60.2	$10.8	$5.5	$5.0	$3.3	$29.0	$10.9	$17.4	$5.4	$12.2	$1.7	$1.4	$0.9	$1.5	$1.9	$1.0	$3.5	$2.1	$4.4	$4.8	$1.4	$0.7	$0.7	$1.2	$0.5	$2.7	$1.3	$0.9	$0.2	$3.1	$0.2	$0.3	$0.5	$4.3	$0.5	$0.5	$1.3	$1.1	$0.1	$1.7	$1.2	$2.3	$2.1	$0.9	$212.8
1993	$62.1	$11.0	$5.5	$4.6	$3.4	$29.1	$10.8	$17.3	$5.6	$12.2	$1.7	$1.4	$0.9	$1.5	$1.9	$1.0	$3.6	$2.1	$4.7	$5.5	$1.5	$0.8	$0.7	$1.2	$0.5	$2.9	$1.4	$0.9	$0.2	$3.3	$0.3	$0.3	$0.5	$4.4	$0.5	$0.5	$1.3	$1.0	$0.1	$1.7	$1.2	$2.3	$2.3	$0.9	$216.6
1994	$63.7	$11.3	$5.6	$4.0	$3.4	$28.9	$10.9	$17.4	$5.8	$12.2	$1.7	$1.5	$0.9	$1.6	$1.9	$1.1	$3.7	$2.1	$4.8	$6.1	$1.6	$0.8	$0.7	$1.2	$0.6	$3.0	$1.5	$0.8	$0.2	$3.5	$0.3	$0.3	$0.6	$4.6	$0.6	$0.5	$1.4	$1.0	$0.1	$1.7	$1.3	$2.3	$2.1	$0.9	$220.1
1995	$64.8	$11.6	$5.7	$3.8	$3.5	$29.2	$11.1	$17.6	$5.9	$12.4	$1.7	$1.5	$1.0	$1.6	$2.0	$1.1	$3.8	$2.2	$5.0	$6.7	$1.7	$0.8	$0.7	$1.2	$0.6	$3.2	$1.6	$0.9	$0.1	$3.8	$0.4	$0.2	$0.6	$4.2	$0.6	$0.5	$1.4	$1.1	$0.1	$1.7	$1.3	$2.3	$2.3	$0.9	$224.2
1996	$66.8	$11.8	$5.8	$3.6	$3.6	$29.8	$11.2	$17.6	$5.9	$12.4	$1.8	$1.5	$1.0	$1.7	$2.0	$1.1	$3.9	$2.2	$5.1	$7.4	$1.8	$0.8	$0.7	$1.2	$0.6	$3.4	$1.7	$0.9	$0.2	$4.0	$0.4	$0.2	$0.7	$4.4	$0.6	$0.5	$1.5	$1.1	$0.1	$1.7	$1.3	$2.3	$2.4	$0.9	$229.7
1997	$67.7	$12.2	$5.8	$3.5	$3.7	$29.3	$11.0	$17.4	$6.0	$12.3	$1.7	$1.5	$1.0	$1.7	$2.0	$1.2	$4.0	$2.2	$5.1	$7.8	$1.8	$0.8	$0.7	$1.2	$0.6	$3.5	$1.7	$0.9	$0.2	$4.1	$0.4	$0.2	$0.7	$4.6	$0.6	$0.5	$1.6	$1.1	$0.2	$1.7	$1.3	$2.2	$2.5	$0.9	$231.4
1998	$68.9	$12.3	$5.9	$3.3	$3.7	$28.0	$10.9	$17.3	$6.1	$12.4	$1.8	$1.5	$1.1	$1.7	$2.0	$1.2	$4.1	$2.2	$5.0	$8.2	$1.8	$0.8	$0.7	$1.2	$0.6	$3.6	$1.4	$0.9	$0.2	$3.8	$0.4	$0.2	$0.6	$4.7	$0.6	$0.5	$1.6	$1.1	$0.2	$1.7	$1.3	$2.2	$2.5	$0.9	$231.4
1999	$71.2	$12.6	$6.1	$3.4	$3.8	$27.6	$10.9	$17.3	$6.3	$12.6	$1.8	$1.6	$1.1	$1.8	$2.1	$1.1	$4.2	$2.2	$4.9	$8.7	$1.9	$0.8	$0.7	$1.3	$0.6	$3.8	$1.4	$0.9	$0.3	$4.1	$0.3	$0.2	$0.7	$4.8	$0.6	$0.5	$1.7	$1.2	$0.2	$1.7	$1.3	$2.2	$2.4	$0.8	$235.6
2000	$73.5	$13.0	$6.3	$3.7	$3.9	$28.1	$11.2	$17.7	$6.6	$13.0	$1.8	$1.6	$1.1	$1.8	$2.1	$1.1	$4.2	$2.3	$5.1	$9.3	$2.0	$0.8	$0.7	$1.3	$0.6	$3.9	$1.5	$1.0	$0.3	$4.5	$0.4	$0.2	$0.7	$5.1	$0.6	$0.5	$1.7	$1.2	$0.2	$1.7	$1.3	$2.3	$2.5	$0.8	$243.7
2001	$73.1	$13.2	$6.5	$3.9	$4.0	$27.7	$11.2	$17.7	$6.6	$13.0	$1.8	$1.6	$1.1	$1.8	$2.1	$1.0	$4.3	$2.3	$5.0	$9.9	$1.9	$0.8	$0.7	$1.3	$0.6	$4.1	$1.5	$1.0	$0.3	$4.6	$0.4	$0.2	$0.7	$5.0	$0.6	$0.6	$1.7	$1.2	$0.2	$1.7	$1.4	$2.3	$2.4	$0.9	$244.0
2002	$74.2	$13.5	$6.6	$4.0	$3.9	$27.7	$11.2	$17.6	$6.8	$13.1	$1.9	$1.6	$1.2	$1.8	$2.2	$0.9	$4.5	$2.3	$5.2	$10.8	$2.0	$0.8	$0.7	$1.4	$0.6	$4.2	$1.6	$1.1	$0.2	$4.9	$0.4	$0.2	$0.7	$5.0	$0.7	$0.6	$1.7	$1.2	$0.2	$1.7	$1.4	$2.3	$2.5	$0.8	$248.1
2003	$77.6	$14.3	$7.0	$4.4	$4.0	$28.6	$11.5	$17.9	$7.0	$13.5	$1.9	$1.6	$1.2	$1.9	$2.3	$1.0	$4.7	$2.4	$5.3	$12.1	$2.2	$0.9	$0.8	$1.5	$0.7	$4.6	$1.7	$1.2	$0.1	$5.1	$0.4	$0.3	$0.8	$5.2	$0.7	$0.6	$1.8	$1.2	$0.2	$1.9	$1.5	$2.3	$2.7	$0.7	$259.4
2004	$81.3	$14.9	$7.3	$4.8	$4.2	$29.8	$11.8	$18.3	$7.3	$14.0	$2.0	$1.7	$1.3	$2.0	$2.4	$1.1	$4.9	$2.5	$5.7	$13.5	$2.3	$0.9	$0.8	$1.6	$0.7	$5.1	$1.8	$1.2	$0.2	$5.4	$0.5	$0.3	$0.9	$5.5	$0.7	$0.7	$2.0	$1.3	$0.3	$2.0	$1.6	$2.4	$3.0	$0.9	$272.6
2005	$83.7	$15.2	$7.5	$5.1	$4.3	$30.3	$11.9	$18.4	$7.6	$14.2	$2.0	$1.7	$1.3	$2.0	$2.5	$1.2	$5.1	$2.5	$5.9	$15.0	$2.4	$1.0	$0.9	$1.6	$0.7	$5.6	$1.9	$1.3	$0.2	$5.6	$0.5	$0.3	$0.9	$5.6	$0.8	$0.7	$2.0	$1.3	$0.3	$2.1	$1.6	$2.5	$3.2	$1.0	$281.7
2006	$84.9	$15.4	$7.7	$5.4	$4.3	$30.6	$12.0	$18.9	$7.7	$14.4	$2.1	$1.8	$1.3	$2.1	$2.5	$1.3	$5.2	$2.6	$6.0	$16.7	$2.5	$1.0	$0.9	$1.7	$0.8	$6.0	$2.0	$1.3	$0.2	$5.8	$0.6	$0.3	$1.0	$5.9	$0.8	$0.8	$2.1	$1.3	$0.3	$2.1	$1.7	$2.5	$3.4	$1.1	$289.1
2007	$85.3	$15.7	$7.9	$5.8	$4.4	$30.8	$12.0	$19.2	$7.7	$14.5	$2.1	$1.8	$1.4	$2.1	$2.6	$1.4	$5.3	$2.6	$6.3	$18.8	$2.6	$1.1	$1.0	$1.7	$0.7	$6.5	$2.1	$1.4	$0.2	$6.1	$0.6	$0.3	$1.0	$6.0	$0.8	$0.8	$2.2	$1.3	$0.4	$2.2	$1.8	$2.6	$3.5	$1.1	$295.9
2008	$84.8	$15.5	$8.0	$6.1	$4.5	$30.4	$11.9	$19.4	$7.8	$14.5	$2.2	$1.7	$1.4	$2.1	$2.6	$1.5	$5.4	$2.6	$6.6	$20.6	$2.7	$1.1	$1.0	$1.7	$0.7	$6.8	$2.2	$1.5	$0.2	$6.2	$0.6	$0.3	$1.1	$6.0	$0.8	$0.9	$2.3	$1.3	$0.5	$2.2	$1.8	$2.6	$3.5	$1.2	$298.8
2009	$83.6	$15.1	$7.8	$5.8	$4.5	$29.1	$11.5	$18.8	$7.7	$14.4	$2.1	$1.7	$1.3	$2.1	$2.5	$1.5	$5.6	$2.6	$6.7	$23.0	$2.7	$1.2	$1.0	$1.7	$0.7	$7.6	$2.4	$1.5	$0.3	$6.3	$0.6	$0.3	$1.1	$5.8	$0.8	$1.0	$2.4	$1.3	$0.6	$2.3	$1.9	$2.7	$3.4	$1.2	$297.8
2010	$87.4	$15.7	$7.9	$6.1	$4.6	$30.7	$11.8	$19.8	$8.1	$14.8	$2.2	$1.7	$1.4	$2.1	$2.7	$1.7	$5.9	$2.7	$7.3	$25.8	$3.0	$1.2	$1.0	$1.6	$0.7	$8.4	$2.5	$1.5	$0.3	$6.8	$0.6	$0.4	$1.2	$6.2	$0.8	$1.0	$2.6	$1.3	$0.7	$2.4	$1.9	$2.8	$3.8	$1.2	$314.3

Table 23. GDP Tax $fGDP_{e+CO2}$, Nordhaus SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	11%	8%	7%	34%	9%	8%	6%	13%	11%	8%	8%	6%	8%	6%	10%	14%	7%	9%	9%	43%	16%	11%	10%	7%	11%	12%	13%	22%	4%	11%	15%	6%	15%	7%	7%	9%	14%	6%	3%	10%	7%	5%	7%	18%	11%
1981	10%	7%	6%	32%	9%	7%	6%	12%	11%	7%	7%	5%	8%	6%	9%	13%	7%	8%	8%	36%	13%	10%	11%	6%	10%	11%	12%	19%	6%	11%	15%	8%	15%	7%	6%	9%	14%	6%	3%	9%	6%	5%	7%	14%	10%
1982	9%	6%	5%	26%	9%	6%	5%	11%	10%	6%	6%	5%	6%	5%	7%	13%	7%	8%	8%	30%	10%	9%	9%	5%	9%	11%	11%	16%	6%	9%	17%	7%	13%	6%	6%	9%	15%	5%	3%	10%	5%	4%	6%	12%	9%
1983	8%	5%	5%	21%	8%	5%	5%	10%	9%	5%	5%	4%	6%	5%	6%	11%	6%	7%	7%	26%	9%	7%	8%	5%	8%	10%	9%	13%	4%	8%	14%	8%	11%	5%	6%	8%	13%	5%	3%	10%	5%	4%	5%	11%	8%
1984	8%	5%	5%	21%	7%	5%	4%	9%	9%	5%	5%	3%	5%	5%	5%	11%	5%	6%	7%	21%	8%	7%	8%	4%	7%	9%	8%	15%	4%	7%	12%	8%	11%	5%	5%	7%	11%	5%	4%	9%	4%	4%	5%	10%	8%
1985	7%	5%	4%	20%	6%	5%	4%	9%	8%	5%	5%	4%	5%	4%	6%	11%	5%	6%	6%	19%	7%	7%	7%	4%	7%	9%	8%	14%	5%	7%	14%	8%	11%	5%	4%	6%	11%	4%	4%	9%	4%	4%	5%	10%	7%
1986	5%	4%	3%	14%	5%	4%	3%	9%	6%	4%	4%	3%	4%	4%	5%	8%	3%	5%	5%	15%	5%	6%	6%	3%	6%	7%	5%	9%	3%	5%	7%	4%	7%	3%	4%	4%	11%	3%	4%	4%	3%	4%	3%	6%	6%
1987	5%	4%	4%	16%	5%	4%	3%	10%	7%	5%	5%	3%	5%	5%	5%	9%	4%	5%	6%	16%	5%	5%	7%	3%	7%	7%	6%	11%	4%	6%	10%	7%	8%	4%	4%	5%	13%	4%	4%	6%	3%	4%	4%	8%	6%
1988	5%	4%	4%	15%	4%	4%	3%	9%	6%	4%	5%	3%	4%	5%	5%	8%	4%	5%	6%	14%	5%	6%	6%	3%	6%	7%	5%	10%	4%	5%	10%	4%	7%	3%	4%	4%	12%	3%	4%	5%	3%	4%	4%	6%	6%
1989	5%	4%	4%	16%	4%	4%	3%	9%	6%	4%	4%	3%	4%	4%	5%	8%	4%	5%	7%	13%	5%	6%	6%	3%	5%	7%	6%	12%	4%	6%	11%	5%	7%	4%	4%	4%	10%	3%	4%	5%	3%	4%	4%	7%	5%
1990	5%	4%	4%	14%	5%	4%	3%	8%	7%	5%	4%	3%	4%	5%	6%	10%	4%	5%	8%	18%	6%	6%	5%	4%	6%	8%	7%	13%	8%	6%	6%	5%	8%	4%	5%	5%	9%	3%	4%	5%	4%	4%	4%	8%	6%
1991	5%	4%	4%	13%	4%	4%	4%	7%	7%	4%	4%	3%	4%	5%	6%	8%	4%	5%	7%	13%	5%	6%	5%	3%	6%	9%	6%	11%	11%	6%	2%	5%	7%	4%	5%	4%	10%	3%	4%	5%	4%	4%	4%	6%	5%
1992	4%	4%	4%	14%	5%	4%	4%	7%	7%	5%	4%	3%	5%	6%	6%	8%	4%	5%	7%	18%	6%	5%	6%	3%	6%	8%	6%	10%	14%	6%	3%	4%	6%	4%	5%	4%	10%	3%	3%	5%	4%	4%	4%	6%	5%
1993	4%	4%	3%	9%	5%	4%	3%	6%	6%	4%	4%	3%	5%	6%	5%	7%	3%	5%	6%	16%	5%	6%	5%	3%	5%	6%	5%	9%	20%	6%	3%	4%	6%	4%	4%	4%	9%	3%	2%	4%	3%	4%	4%	5%	5%
1994	4%	3%	3%	10%	5%	4%	3%	6%	6%	4%	4%	2%	5%	5%	4%	7%	3%	4%	6%	9%	4%	5%	5%	3%	5%	6%	5%	9%	20%	5%	4%	4%	6%	3%	5%	3%	9%	3%	3%	5%	3%	4%	3%	6%	5%
1995	4%	3%	3%	13%	5%	5%	3%	6%	6%	4%	4%	2%	5%	5%	5%	8%	3%	5%	5%	9%	4%	5%	5%	3%	6%	6%	5%	10%	22%	6%	5%	6%	6%	3%	5%	3%	9%	3%	4%	5%	3%	4%	4%	6%	5%
1996	4%	3%	4%	9%	4%	4%	3%	4%	6%	5%	4%	3%	5%	5%	5%	8%	3%	5%	6%	8%	5%	5%	5%	4%	6%	7%	5%	11%	24%	6%	6%	6%	7%	4%	5%	3%	9%	4%	5%	6%	3%	4%	4%	6%	5%
1997	4%	3%	3%	8%	4%	4%	3%	4%	5%	4%	4%	3%	5%	5%	4%	7%	3%	4%	6%	8%	4%	5%	5%	3%	5%	7%	5%	9%	21%	6%	4%	6%	6%	3%	5%	3%	7%	3%	2%	4%	3%	4%	4%	4%	4%
1998	3%	3%	3%	7%	3%	4%	3%	3%	4%	3%	4%	2%	4%	4%	5%	6%	2%	4%	5%	7%	4%	4%	5%	3%	5%	5%	4%	6%	8%	5%	3%	4%	4%	3%	4%	3%	6%	3%	2%	3%	3%	3%	3%	3%	4%
1999	3%	3%	3%	8%	3%	4%	3%	3%	5%	3%	3%	2%	4%	4%	4%	7%	3%	4%	6%	7%	4%	4%	5%	3%	5%	6%	5%	8%	7%	6%	6%	6%	5%	3%	4%	3%	6%	3%	3%	4%	3%	3%	3%	5%	4%
2000	4%	3%	3%	8%	4%	5%	3%	3%	5%	3%	3%	2%	3%	3%	4%	9%	3%	4%	6%	8%	5%	5%	5%	4%	5%	7%	8%	11%	13%	7%	8%	9%	7%	4%	4%	5%	5%	3%	2%	6%	3%	3%	4%	6%	4%
2001	4%	3%	3%	7%	4%	4%	3%	3%	5%	3%	3%	2%	3%	3%	4%	8%	3%	4%	6%	7%	4%	5%	5%	3%	5%	6%	7%	10%	12%	6%	7%	8%	6%	4%	4%	5%	5%	3%	2%	5%	3%	3%	4%	6%	4%
2002	4%	3%	3%	6%	4%	4%	3%	3%	5%	3%	3%	3%	3%	3%	5%	8%	3%	5%	6%	7%	4%	5%	5%	3%	5%	6%	7%	9%	14%	6%	8%	8%	6%	4%	4%	4%	5%	3%	2%	6%	3%	3%	4%	7%	4%
2003	4%	3%	4%	7%	5%	4%	3%	4%	6%	4%	4%	3%	4%	4%	6%	9%	3%	5%	6%	8%	4%	5%	7%	3%	6%	6%	8%	10%	24%	7%	8%	9%	7%	4%	4%	5%	6%	4%	3%	6%	3%	3%	4%	8%	5%
2004	5%	3%	4%	10%	5%	4%	4%	5%	7%	4%	5%	3%	4%	4%	6%	12%	4%	6%	7%	10%	5%	6%	9%	4%	7%	8%	10%	14%	23%	6%	10%	11%	9%	5%	5%	7%	5%	4%	4%	9%	4%	4%	5%	9%	5%
2005	6%	4%	5%	12%	6%	5%	4%	5%	8%	5%	5%	4%	5%	5%	6%	14%	4%	7%	8%	12%	7%	7%	10%	5%	9%	9%	12%	23%	31%	7%	14%	13%	11%	7%	6%	7%	8%	5%	6%	12%	5%	4%	5%	9%	6%
2006	6%	4%	5%	13%	7%	5%	5%	6%	8%	5%	6%	4%	6%	5%	6%	14%	4%	7%	9%	12%	7%	7%	10%	6%	10%	10%	12%	27%	28%	8%	16%	14%	11%	7%	6%	6%	8%	5%	6%	14%	6%	4%	6%	12%	7%
2007	6%	4%	6%	13%	6%	5%	5%	6%	8%	5%	6%	4%	5%	5%	6%	14%	4%	8%	9%	13%	7%	8%	10%	6%	10%	10%	13%	29%	31%	9%	18%	14%	13%	8%	7%	6%	8%	5%	5%	15%	7%	4%	7%	13%	7%
2008	7%	5%	7%	17%	9%	6%	6%	7%	10%	7%	7%	5%	7%	5%	7%	17%	5%	10%	11%	18%	8%	9%	13%	8%	13%	12%	16%	34%	45%	10%	22%	19%	15%	10%	8%	7%	10%	7%	6%	20%	9%	5%	9%	19%	9%
2009	5%	4%	5%	13%	7%	5%	5%	6%	7%	5%	6%	4%	5%	5%	6%	11%	4%	7%	8%	13%	6%	7%	11%	5%	11%	9%	11%	25%	36%	7%	17%	14%	11%	6%	6%	4%	7%	5%	5%	14%	7%	4%	7%	14%	7%
2010	6%	4%	6%	16%	7%	6%	6%	6%	7%	6%	6%	5%	6%	6%	7%	12%	4%	9%	9%	14%	7%	7%	11%	6%	12%	11%	12%	30%	54%	9%	22%	18%	13%	8%	7%	5%	8%	7%	8%	18%	7%	4%	7%	19%	7%

Table 24. GDP Tax 2005$ U.S. Billions, Stern SCC, 1980-2010.

Year	United State	United Kin	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$ 442.7	$ 86.5	$ 41.8	$ 75.2	$ 26.8	$ 184.2	$ 87.4	$ 134.5	$ 43.4	$ 98.0	$ 13.2	$ 11.7	$ 7.9	$ 11.3	$ 16.2	$ 9.5	$ 25.5	$ 17.5	$ 39.2	$ 16.5	$ 6.1	$ 5.1	$ 6.9	$ 11.1	$ 6.0	$ 15.6	$ 6.2	$ 6.3	$ 12.1	$ 10.9	$ 3.1	$ 4.2	$ 2.4	$ 35.0	$ 4.4	$ 4.4	$ 13.9	$ 7.6	$ 1.4	$ 16.3	$ 11.2	$ 19.2	$ 12.4	$ 7.3	$ 1,618.1
1981	$ 445.6	$ 83.8	$ 41.0	$ 75.4	$ 26.1	$ 188.3	$ 86.5	$ 132.7	$ 44.1	$ 97.2	$ 12.9	$ 11.3	$ 7.9	$ 11.3	$ 15.9	$ 8.8	$ 25.8	$ 17.1	$ 36.8	$ 17.1	$ 6.4	$ 5.1	$ 6.7	$ 10.8	$ 6.0	$ 16.2	$ 6.6	$ 5.9	$ 7.2	$ 11.5	$ 2.4	$ 3.3	$ 2.5	$ 37.4	$ 4.4	$ 3.7	$ 12.2	$ 7.6	$ 1.3	$ 16.8	$ 11.6	$ 19.2	$ 12.8	$ 7.2	$ 1,610.2
1982	$ 428.6	$ 84.1	$ 40.7	$ 76.1	$ 25.3	$ 191.1	$ 85.2	$ 129.7	$ 42.0	$ 97.7	$ 12.9	$ 11.5	$ 8.0	$ 11.1	$ 15.8	$ 8.2	$ 24.8	$ 16.9	$ 36.3	$ 18.3	$ 6.5	$ 5.0	$ 6.7	$ 10.4	$ 6.1	$ 16.5	$ 6.5	$ 6.5	$ 6.2	$ 12.2	$ 2.1	$ 3.3	$ 2.6	$ 36.4	$ 4.5	$ 3.6	$ 11.4	$ 7.6	$ 1.2	$ 14.6	$ 11.4	$ 18.6	$ 13.0	$ 6.9	$ 1,583.9
1983	$ 449.1	$ 87.4	$ 41.5	$ 78.8	$ 25.9	$ 197.4	$ 86.5	$ 132.1	$ 43.3	$ 99.1	$ 13.4	$ 11.9	$ 8.2	$ 11.5	$ 16.1	$ 8.5	$ 26.0	$ 17.0	$ 35.2	$ 20.3	$ 7.1	$ 5.1	$ 6.8	$ 10.4	$ 6.2	$ 17.7	$ 7.1	$ 7.4	$ 8.7	$ 13.7	$ 2.3	$ 3.1	$ 2.7	$ 34.9	$ 4.7	$ 3.5	$ 12.1	$ 7.6	$ 1.1	$ 13.5	$ 11.2	$ 18.8	$ 13.6	$ 6.7	$ 1,635.0
1984	$ 506.3	$ 94.4	$ 44.5	$ 84.0	$ 28.1	$ 216.9	$ 93.9	$ 142.8	$ 48.2	$ 105.8	$ 14.1	$ 13.0	$ 8.9	$ 12.8	$ 17.7	$ 9.1	$ 28.7	$ 18.3	$ 38.9	$ 24.6	$ 8.1	$ 5.6	$ 7.3	$ 11.1	$ 6.6	$ 19.3	$ 8.0	$ 7.6	$ 9.2	$ 15.8	$ 2.6	$ 3.0	$ 3.1	$ 38.0	$ 5.1	$ 3.5	$ 13.5	$ 7.9	$ 1.3	$ 13.7	$ 12.4	$ 20.3	$ 15.3	$ 7.1	$ 1,796.4
1985	$ 538.7	$ 100.0	$ 46.5	$ 86.8	$ 29.4	$ 235.7	$ 98.6	$ 149.3	$ 51.6	$ 109.9	$ 14.7	$ 13.8	$ 9.4	$ 13.8	$ 18.4	$ 8.6	$ 30.7	$ 19.1	$ 42.9	$ 28.5	$ 8.7	$ 5.9	$ 7.5	$ 11.6	$ 6.8	$ 20.8	$ 8.4	$ 7.9	$ 8.0	$ 17.4	$ 2.5	$ 3.1	$ 3.1	$ 40.0	$ 5.3	$ 3.9	$ 14.5	$ 8.3	$ 1.2	$ 13.4	$ 12.5	$ 21.5	$ 16.3	$ 7.3	$ 1,902.4
1986	$ 564.3	$ 105.3	$ 48.6	$ 91.6	$ 30.6	$ 245.5	$ 102.7	$ 154.7	$ 53.5	$ 113.8	$ 15.3	$ 14.7	$ 9.8	$ 14.5	$ 19.2	$ 9.4	$ 31.9	$ 19.6	$ 47.0	$ 31.4	$ 9.7	$ 6.3	$ 7.7	$ 11.9	$ 7.0	$ 22.1	$ 9.0	$ 7.3	$ 6.6	$ 19.8	$ 2.8	$ 2.8	$ 3.2	$ 39.0	$ 5.5	$ 4.0	$ 15.3	$ 8.7	$ 1.2	$ 14.3	$ 12.6	$ 22.2	$ 17.7	$ 7.8	$ 1,988.0
1987	$ 601.7	$ 113.8	$ 53.0	$ 95.9	$ 32.3	$ 264.2	$ 109.6	$ 162.2	$ 57.7	$ 120.4	$ 16.0	$ 15.2	$ 10.5	$ 15.3	$ 20.5	$ 10.0	$ 34.9	$ 20.8	$ 50.3	$ 36.3	$ 11.1	$ 6.9	$ 8.0	$ 12.0	$ 7.5	$ 23.7	$ 9.8	$ 7.4	$ 6.7	$ 22.9	$ 3.1	$ 2.5	$ 3.5	$ 41.0	$ 5.7	$ 4.1	$ 16.1	$ 9.6	$ 1.3	$ 14.2	$ 13.3	$ 23.3	$ 20.0	$ 8.4	$ 2,122.8
1988	$ 650.1	$ 124.1	$ 57.9	$ 101.0	$ 34.7	$ 293.7	$ 118.5	$ 174.5	$ 62.8	$ 130.8	$ 17.1	$ 15.8	$ 11.4	$ 15.9	$ 21.9	$ 10.2	$ 37.6	$ 22.6	$ 52.2	$ 41.9	$ 12.2	$ 7.4	$ 8.5	$ 13.0	$ 7.8	$ 27.0	$ 10.9	$ 7.2	$ 6.3	$ 26.6	$ 2.9	$ 2.7	$ 4.0	$ 43.1	$ 6.0	$ 4.7	$ 17.4	$ 10.7	$ 1.4	$ 15.9	$ 14.4	$ 25.0	$ 21.2	$ 9.2	$ 2,300.1
1989	$ 690.5	$ 130.2	$ 62.2	$ 106.6	$ 37.1	$ 317.4	$ 125.6	$ 186.0	$ 66.1	$ 139.8	$ 18.2	$ 16.3	$ 12.3	$ 16.4	$ 23.1	$ 9.6	$ 40.0	$ 24.0	$ 55.2	$ 44.7	$ 13.8	$ 7.9	$ 9.1	$ 13.8	$ 8.0	$ 29.3	$ 12.2	$ 7.9	$ 6.9	$ 29.1	$ 3.7	$ 3.0	$ 4.5	$ 46.1	$ 6.2	$ 5.2	$ 17.8	$ 11.7	$ 1.5	$ 16.3	$ 15.1	$ 26.7	$ 21.8	$ 8.7	$ 2,447.8
1990	$ 705.6	$ 131.6	$ 64.8	$ 74.7	$ 38.8	$ 336.2	$ 128.6	$ 196.4	$ 66.5	$ 143.9	$ 19.1	$ 16.6	$ 12.4	$ 16.8	$ 23.4	$ 9.4	$ 40.0	$ 24.8	$ 53.0	$ 46.6	$ 14.8	$ 8.4	$ 9.0	$ 13.8	$ 7.8	$ 31.0	$ 13.3	$ 9.0	$ 4.8	$ 31.9	$ 3.2	$ 3.1	$ 4.9	$ 48.5	$ 6.2	$ 5.6	$ 16.0	$ 12.2	$ 1.3	$ 17.8	$ 15.1	$ 27.8	$ 23.9	$ 9.2	$ 2,488.1
1991	$ 762.8	$ 140.7	$ 72.0	$ 76.9	$ 43.1	$ 376.6	$ 141.6	$ 223.8	$ 70.5	$ 157.6	$ 21.4	$ 18.2	$ 12.7	$ 18.8	$ 25.1	$ 11.5	$ 43.6	$ 27.4	$ 58.4	$ 55.1	$ 17.3	$ 9.3	$ 8.7	$ 15.5	$ 7.4	$ 34.0	$ 15.7	$ 11.0	$ 2.6	$ 38.0	$ 2.1	$ 3.9	$ 5.8	$ 54.8	$ 6.6	$ 6.4	$ 16.1	$ 13.8	$ 1.4	$ 21.0	$ 16.3	$ 29.9	$ 26.1	$ 11.0	$ 2,732.1
1992	$ 899.1	$ 160.6	$ 82.8	$ 74.9	$ 49.9	$ 432.7	$ 162.6	$ 259.9	$ 81.1	$ 182.3	$ 24.9	$ 21.2	$ 13.9	$ 22.2	$ 28.2	$ 14.7	$ 51.7	$ 31.7	$ 66.2	$ 71.8	$ 21.2	$ 11.1	$ 9.8	$ 17.8	$ 8.2	$ 40.9	$ 19.2	$ 13.0	$ 3.4	$ 45.8	$ 3.6	$ 4.4	$ 7.2	$ 64.8	$ 7.6	$ 7.5	$ 18.8	$ 15.9	$ 1.7	$ 25.1	$ 18.1	$ 34.1	$ 31.6	$ 13.3	$ 3,176.4
1993	$ 941.6	$ 167.1	$ 83.4	$ 69.6	$ 51.5	$ 441.3	$ 164.1	$ 261.9	$ 84.5	$ 184.3	$ 25.5	$ 21.6	$ 14.1	$ 23.2	$ 28.1	$ 15.8	$ 54.7	$ 31.9	$ 70.5	$ 83.3	$ 23.1	$ 11.6	$ 10.0	$ 17.8	$ 8.3	$ 43.6	$ 21.0	$ 13.1	$ 2.4	$ 49.5	$ 4.9	$ 4.3	$ 8.0	$ 67.2	$ 8.3	$ 7.8	$ 19.9	$ 15.8	$ 1.7	$ 25.5	$ 18.7	$ 34.6	$ 34.7	$ 13.6	$ 3,283.4
1994	$ 996.2	$ 177.1	$ 86.8	$ 61.9	$ 53.9	$ 452.3	$ 170.4	$ 272.8	$ 90.0	$ 191.5	$ 26.5	$ 23.1	$ 14.8	$ 24.7	$ 29.7	$ 17.0	$ 57.8	$ 33.5	$ 75.5	$ 95.7	$ 25.2	$ 12.4	$ 10.4	$ 18.4	$ 8.7	$ 47.2	$ 22.9	$ 13.2	$ 2.4	$ 54.8	$ 5.4	$ 4.4	$ 8.9	$ 71.3	$ 8.8	$ 7.9	$ 21.2	$ 16.2	$ 1.8	$ 26.1	$ 19.6	$ 35.6	$ 33.4	$ 13.5	$ 3,441.1
1995	$ 1,040.8	$ 185.9	$ 90.9	$ 60.4	$ 56.6	$ 469.4	$ 178.6	$ 282.5	$ 94.2	$ 199.1	$ 27.7	$ 24.3	$ 15.7	$ 26.3	$ 31.5	$ 16.9	$ 61.3	$ 34.9	$ 80.3	$ 108.2	$ 27.3	$ 13.3	$ 11.2	$ 19.2	$ 9.0	$ 51.8	$ 25.3	$ 13.8	$ 2.4	$ 60.8	$ 5.7	$ 3.9	$ 10.0	$ 68.2	$ 9.4	$ 8.3	$ 23.1	$ 17.3	$ 1.9	$ 26.6	$ 20.6	$ 36.4	$ 36.4	$ 14.3	$ 3,601.6
1996	$ 1,106.7	$ 196.0	$ 95.4	$ 59.7	$ 59.9	$ 493.6	$ 185.0	$ 291.8	$ 98.1	$ 206.2	$ 29.1	$ 25.6	$ 16.6	$ 28.3	$ 32.8	$ 18.2	$ 65.3	$ 36.3	$ 84.1	$ 121.9	$ 29.5	$ 13.9	$ 12.0	$ 20.1	$ 9.2	$ 57.0	$ 27.9	$ 15.2	$ 2.5	$ 66.7	$ 5.9	$ 4.1	$ 11.3	$ 73.5	$ 9.9	$ 8.8	$ 25.2	$ 18.3	$ 2.1	$ 28.2	$ 22.0	$ 37.5	$ 40.0	$ 14.6	$ 3,806.1
1997	$ 1,164.8	$ 209.6	$ 99.8	$ 60.9	$ 63.0	$ 504.9	$ 189.8	$ 298.9	$ 103.0	$ 212.2	$ 30.0	$ 26.6	$ 17.8	$ 30.0	$ 33.9	$ 19.9	$ 68.8	$ 37.9	$ 87.5	$ 134.2	$ 31.4	$ 14.5	$ 12.0	$ 21.0	$ 9.6	$ 59.8	$ 29.4	$ 15.8	$ 3.1	$ 71.1	$ 6.1	$ 4.1	$ 12.2	$ 79.0	$ 10.2	$ 9.1	$ 27.2	$ 19.3	$ 2.7	$ 29.1	$ 22.7	$ 38.6	$ 43.3	$ 15.6	$ 3,980.4
1998	$ 1,216.5	$ 217.7	$ 104.3	$ 57.7	$ 65.5	$ 494.8	$ 192.7	$ 304.6	$ 107.2	$ 219.4	$ 31.1	$ 27.2	$ 18.7	$ 30.8	$ 35.4	$ 20.6	$ 72.4	$ 38.7	$ 87.6	$ 144.7	$ 32.5	$ 14.6	$ 12.0	$ 21.7	$ 10.0	$ 63.5	$ 25.6	$ 16.3	$ 4.2	$ 67.1	$ 6.3	$ 4.1	$ 11.3	$ 83.0	$ 10.4	$ 9.3	$ 28.5	$ 20.3	$ 2.9	$ 30.0	$ 22.9	$ 39.6	$ 44.6	$ 15.7	$ 4,083.8
1999	$ 1,298.7	$ 229.7	$ 111.2	$ 62.5	$ 69.7	$ 502.9	$ 199.0	$ 315.9	$ 115.2	$ 230.7	$ 32.8	$ 28.4	$ 19.8	$ 32.0	$ 37.7	$ 20.3	$ 76.6	$ 40.8	$ 89.4	$ 158.5	$ 35.0	$ 14.2	$ 12.4	$ 22.9	$ 10.5	$ 69.4	$ 26.2	$ 16.9	$ 5.4	$ 75.6	$ 6.3	$ 4.2	$ 12.2	$ 87.7	$ 11.1	$ 9.6	$ 30.4	$ 21.5	$ 3.2	$ 30.3	$ 23.8	$ 40.9	$ 43.9	$ 15.0	$ 4,300.2
2000	$ 1,399.6	$ 248.3	$ 120.8	$ 71.2	$ 75.0	$ 535.2	$ 213.4	$ 336.8	$ 125.4	$ 247.5	$ 35.2	$ 30.4	$ 21.6	$ 34.2	$ 40.7	$ 20.8	$ 80.9	$ 43.7	$ 96.5	$ 177.7	$ 38.4	$ 15.4	$ 13.4	$ 24.7	$ 11.3	$ 74.7	$ 28.5	$ 18.3	$ 5.3	$ 85.1	$ 6.8	$ 4.5	$ 13.7	$ 96.7	$ 11.8	$ 10.5	$ 32.7	$ 23.1	$ 3.6	$ 32.9	$ 25.7	$ 43.8	$ 48.5	$ 16.1	$ 4,640.0
2001	$ 1,416.3	$ 256.4	$ 125.4	$ 74.9	$ 76.5	$ 536.7	$ 217.6	$ 342.3	$ 127.8	$ 252.3	$ 35.5	$ 30.6	$ 22.1	$ 34.9	$ 41.3	$ 19.9	$ 84.1	$ 44.1	$ 97.8	$ 192.7	$ 37.8	$ 15.7	$ 13.8	$ 25.8	$ 11.7	$ 78.7	$ 29.5	$ 19.0	$ 5.0	$ 88.5	$ 6.9	$ 4.3	$ 13.8	$ 96.7	$ 12.2	$ 10.8	$ 33.2	$ 23.6	$ 3.7	$ 33.1	$ 26.4	$ 44.3	$ 45.8	$ 16.7	$ 4,726.1
2002	$ 1,466.4	$ 267.6	$ 130.9	$ 79.7	$ 77.9	$ 547.2	$ 222.2	$ 348.0	$ 133.7	$ 258.9	$ 36.7	$ 31.3	$ 22.9	$ 36.0	$ 43.0	$ 18.1	$ 88.3	$ 45.5	$ 102.1	$ 213.7	$ 40.4	$ 16.3	$ 14.3	$ 27.1	$ 12.4	$ 83.0	$ 31.4	$ 20.8	$ 4.7	$ 96.5	$ 7.2	$ 4.3	$ 14.8	$ 99.1	$ 13.0	$ 11.1	$ 34.2	$ 24.2	$ 4.1	$ 33.7	$ 27.8	$ 45.3	$ 49.4	$ 15.4	$ 4,900.8
2003	$ 1,572.2	$ 289.6	$ 141.1	$ 89.4	$ 81.7	$ 580.1	$ 232.2	$ 362.5	$ 142.4	$ 273.1	$ 38.7	$ 32.8	$ 24.4	$ 38.0	$ 46.0	$ 20.5	$ 96.2	$ 47.9	$ 108.0	$ 245.8	$ 43.8	$ 17.7	$ 15.5	$ 30.0	$ 13.5	$ 94.0	$ 34.4	$ 23.3	$ 2.9	$ 103.7	$ 8.8	$ 5.1	$ 16.4	$ 105.1	$ 14.1	$ 12.9	$ 37.2	$ 25.0	$ 4.4	$ 37.9	$ 30.0	$ 47.2	$ 54.4	$ 14.9	$ 5,254.9
2004	$ 1,710.3	$ 313.4	$ 153.2	$ 100.8	$ 87.8	$ 626.6	$ 248.3	$ 385.5	$ 154.4	$ 294.4	$ 41.8	$ 35.3	$ 26.7	$ 41.6	$ 50.4	$ 23.5	$ 104.1	$ 52.0	$ 120.0	$ 284.5	$ 48.9	$ 19.6	$ 17.1	$ 32.9	$ 14.9	$ 107.0	$ 37.9	$ 25.8	$ 4.4	$ 114.0	$ 10.2	$ 5.6	$ 18.4	$ 114.9	$ 15.4	$ 14.9	$ 41.2	$ 26.7	$ 5.6	$ 41.9	$ 32.9	$ 50.9	$ 62.5	$ 18.5	$ 5,736.9
2005	$ 1,821.4	$ 330.6	$ 163.9	$ 110.8	$ 92.6	$ 659.9	$ 259.0	$ 401.0	$ 164.4	$ 309.7	$ 44.2	$ 37.4	$ 28.4	$ 44.1	$ 53.7	$ 26.6	$ 110.9	$ 54.7	$ 127.9	$ 327.2	$ 52.9	$ 21.2	$ 18.9	$ 34.8	$ 16.0	$ 120.9	$ 41.4	$ 27.8	$ 4.5	$ 122.5	$ 11.7	$ 6.4	$ 20.0	$ 122.7	$ 16.4	$ 16.3	$ 44.1	$ 27.8	$ 6.2	$ 45.7	$ 35.8	$ 54.0	$ 70.0	$ 21.1	$ 6,127.3
2006	$ 1,918.9	$ 348.1	$ 175.1	$ 122.9	$ 98.2	$ 691.1	$ 271.6	$ 426.8	$ 173.4	$ 325.7	$ 47.0	$ 39.6	$ 30.4	$ 46.3	$ 57.5	$ 29.6	$ 117.8	$ 57.6	$ 136.4	$ 378.4	$ 57.2	$ 23.3	$ 20.7	$ 37.7	$ 17.1	$ 135.6	$ 44.9	$ 30.3	$ 4.9	$ 132.2	$ 12.6	$ 6.9	$ 21.7	$ 132.2	$ 17.2	$ 17.7	$ 48.0	$ 29.0	$ 7.6	$ 48.4	$ 38.8	$ 57.4	$ 76.8	$ 23.8	$ 6,534.8
2007	$ 2,001.4	$ 368.6	$ 185.4	$ 136.5	$ 104.5	$ 724.0	$ 282.6	$ 451.0	$ 181.4	$ 341.0	$ 49.9	$ 41.2	$ 32.8	$ 48.7	$ 60.8	$ 32.9	$ 125.2	$ 60.7	$ 148.1	$ 442.2	$ 62.1	$ 25.5	$ 22.4	$ 39.7	$ 17.5	$ 152.4	$ 48.8	$ 33.4	$ 5.1	$ 142.2	$ 13.5	$ 7.5	$ 23.7	$ 139.9	$ 18.1	$ 19.3	$ 52.5	$ 30.3	$ 9.9	$ 50.6	$ 41.9	$ 60.9	$ 82.3	$ 26.5	$ 6,945.0
2008	$ 2,014.2	$ 368.2	$ 189.0	$ 145.2	$ 107.4	$ 722.7	$ 282.2	$ 460.5	$ 184.5	$ 344.1	$ 51.1	$ 41.3	$ 33.2	$ 49.2	$ 61.0	$ 35.4	$ 128.3	$ 61.9	$ 157.4	$ 489.6	$ 63.2	$ 26.6	$ 23.3	$ 40.1	$ 17.8	$ 161.5	$ 52.3	$ 34.5	$ 5.7	$ 146.9	$ 14.3	$ 7.9	$ 25.1	$ 143.0	$ 18.1	$ 20.7	$ 55.7	$ 30.6	$ 12.5	$ 53.2	$ 43.9	$ 62.8	$ 83.7	$ 28.2	$ 7,098.0
2009	$ 1,936.5	$ 350.9	$ 181.3	$ 133.4	$ 103.3	$ 674.9	$ 265.8	$ 435.4	$ 178.8	$ 333.6	$ 49.0	$ 38.8	$ 30.3	$ 48.2	$ 57.8	$ 35.6	$ 130.8	$ 59.9	$ 155.8	$ 532.8	$ 61.7	$ 26.9	$ 22.2	$ 38.6	$ 16.5	$ 175.6	$ 54.5	$ 35.0	$ 5.9	$ 146.9	$ 13.5	$ 8.0	$ 24.6	$ 133.6	$ 18.2	$ 22.1	$ 56.4	$ 29.6	$ 13.5	$ 53.1	$ 43.0	$ 61.4	$ 79.3	$ 27.2	$ 6,900.1
2010	$ 2,105.4	$ 378.1	$ 191.2	$ 146.4	$ 110.8	$ 740.5	$ 285.5	$ 476.5	$ 194.7	$ 357.2	$ 52.9	$ 41.4	$ 33.2	$ 51.2	$ 64.7	$ 41.0	$ 141.4	$ 64.7	$ 176.7	$ 620.7	$ 72.2	$ 29.6	$ 24.0	$ 39.3	$ 17.7	$ 201.6	$ 61.0	$ 37.3	$ 6.3	$ 164.6	$ 14.6	$ 8.8	$ 27.8	$ 148.8	$ 19.6	$ 25.1	$ 61.9	$ 31.7	$ 16.6	$ 58.2	$ 46.7	$ 66.6	$ 91.3	$ 28.2	$ 7,574.0

Table 25. GDP Tax $fGDP_{e+CO2}$, Stern SCC, 1980-2010.

Year	United State	United Kin	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerlar	Turkey	Venezuela	World
1980	18%	15%	13%	41%	16%	14%	13%	20%	18%	15%	15%	13%	15%	13%	17%	21%	14%	16%	16%	50%	23%	18%	17%	14%	18%	19%	20%	29%	11%	18%	22%	13%	22%	14%	14%	16%	21%	13%	10%	17%	14%	12%	14%	24%	18%
1981	17%	14%	13%	38%	16%	14%	13%	19%	18%	14%	14%	12%	15%	13%	16%	20%	14%	15%	15%	43%	19%	17%	18%	13%	17%	18%	19%	26%	12%	18%	22%	15%	21%	14%	13%	16%	21%	12%	10%	16%	13%	12%	14%	21%	17%
1982	16%	13%	12%	33%	15%	13%	12%	18%	17%	13%	13%	12%	13%	12%	14%	19%	14%	14%	14%	37%	17%	15%	16%	12%	16%	17%	18%	23%	13%	16%	24%	14%	19%	13%	13%	15%	22%	12%	10%	16%	12%	11%	13%	18%	16%
1983	15%	12%	11%	28%	14%	12%	11%	17%	16%	12%	12%	11%	12%	11%	13%	18%	12%	13%	14%	33%	16%	14%	15%	11%	15%	16%	16%	20%	11%	15%	21%	14%	18%	12%	12%	15%	20%	12%	10%	16%	12%	11%	12%	18%	15%
1984	15%	12%	12%	28%	14%	12%	11%	16%	16%	12%	12%	11%	12%	12%	12%	18%	12%	13%	14%	28%	15%	14%	15%	11%	15%	16%	15%	22%	11%	14%	19%	15%	18%	12%	12%	14%	19%	12%	11%	16%	11%	11%	12%	17%	15%
1985	14%	12%	12%	27%	14%	12%	11%	16%	15%	12%	12%	11%	12%	12%	13%	18%	12%	13%	14%	26%	15%	14%	15%	11%	15%	16%	15%	22%	12%	14%	21%	15%	18%	12%	11%	14%	18%	12%	12%	16%	11%	11%	12%	17%	14%
1986	13%	11%	11%	22%	12%	12%	10%	17%	14%	12%	12%	10%	11%	12%	13%	15%	11%	13%	13%	22%	12%	13%	14%	10%	14%	14%	13%	17%	11%	13%	14%	12%	14%	11%	11%	11%	18%	11%	11%	12%	10%	11%	11%	13%	13%
1987	13%	12%	11%	23%	12%	12%	11%	18%	14%	12%	12%	11%	12%	12%	13%	16%	11%	13%	13%	23%	13%	13%	15%	11%	14%	15%	14%	19%	12%	13%	18%	14%	15%	11%	12%	12%	21%	11%	13%	11%	11%	12%	12%	15%	14%
1988	13%	12%	12%	23%	12%	12%	11%	17%	14%	12%	12%	11%	12%	13%	13%	16%	11%	13%	14%	22%	13%	14%	14%	11%	14%	15%	13%	18%	12%	13%	18%	12%	15%	11%	12%	12%	20%	11%	12%	13%	11%	12%	12%	14%	14%
1989	13%	12%	12%	24%	12%	12%	11%	17%	15%	12%	12%	11%	12%	13%	13%	17%	12%	13%	15%	21%	13%	14%	14%	11%	14%	15%	14%	20%	13%	14%	19%	13%	15%	12%	12%	13%	18%	11%	12%	13%	11%	12%	12%	15%	14%
1990	13%	12%	12%	22%	13%	12%	12%	17%	15%	13%	12%	11%	13%	13%	14%	18%	12%	13%	16%	26%	14%	14%	14%	12%	14%	17%	15%	21%	16%	14%	14%	13%	16%	13%	13%	13%	17%	12%	12%	13%	12%	12%	13%	16%	14%
1991	14%	13%	13%	22%	13%	13%	13%	16%	16%	13%	13%	12%	13%	14%	15%	17%	13%	14%	15%	22%	14%	14%	14%	12%	15%	18%	15%	20%	20%	15%	11%	14%	16%	13%	14%	13%	19%	12%	13%	14%	13%	13%	13%	15%	14%
1992	15%	14%	14%	24%	15%	14%	14%	17%	17%	15%	15%	13%	16%	16%	16%	18%	14%	15%	17%	29%	16%	16%	16%	13%	16%	18%	16%	21%	24%	16%	14%	14%	17%	14%	15%	15%	20%	13%	14%	15%	14%	14%	14%	17%	16%
1993	15%	14%	14%	20%	15%	15%	13%	16%	16%	15%	15%	13%	16%	16%	15%	17%	14%	15%	16%	27%	16%	16%	15%	13%	16%	17%	16%	19%	31%	16%	14%	14%	16%	14%	15%	14%	20%	13%	12%	15%	13%	14%	14%	16%	15%
1994	15%	14%	14%	21%	15%	15%	14%	16%	16%	15%	15%	13%	16%	16%	15%	18%	14%	15%	17%	19%	15%	16%	15%	14%	16%	17%	15%	20%	31%	16%	15%	15%	16%	14%	15%	14%	19%	14%	14%	15%	14%	14%	14%	16%	15%
1995	15%	14%	14%	24%	16%	15%	14%	17%	16%	15%	15%	13%	16%	16%	16%	18%	14%	15%	16%	20%	15%	16%	16%	14%	16%	17%	16%	21%	33%	17%	16%	17%	17%	14%	16%	14%	20%	14%	15%	16%	14%	15%	15%	17%	16%
1996	15%	14%	15%	21%	16%	15%	15%	16%	17%	16%	16%	14%	16%	16%	16%	19%	14%	16%	17%	19%	16%	17%	16%	15%	17%	18%	16%	22%	36%	17%	17%	17%	18%	15%	16%	15%	20%	15%	16%	17%	14%	15%	15%	17%	16%
1997	15%	14%	14%	19%	15%	15%	14%	15%	17%	15%	15%	14%	16%	16%	15%	19%	14%	16%	17%	20%	16%	16%	16%	15%	16%	18%	17%	20%	33%	17%	16%	17%	17%	15%	16%	14%	18%	14%	13%	15%	14%	15%	15%	16%	16%
1998	14%	14%	14%	18%	14%	15%	14%	15%	16%	15%	15%	14%	15%	16%	16%	17%	14%	15%	17%	18%	15%	15%	16%	14%	16%	17%	15%	18%	19%	16%	14%	16%	15%	14%	15%	14%	17%	14%	13%	14%	14%	15%	15%	14%	15%
1999	15%	14%	14%	19%	15%	16%	14%	15%	16%	15%	15%	14%	16%	16%	16%	18%	14%	15%	17%	18%	16%	16%	16%	14%	16%	17%	17%	19%	19%	17%	17%	18%	17%	15%	15%	15%	17%	14%	14%	16%	14%	15%	15%	17%	15%
2000	16%	15%	15%	20%	16%	17%	15%	15%	17%	15%	15%	14%	15%	15%	16%	21%	15%	16%	18%	20%	17%	17%	17%	16%	17%	19%	20%	23%	25%	19%	20%	21%	19%	16%	16%	17%	17%	15%	14%	18%	15%	15%	16%	18%	16%
2001	16%	15%	15%	19%	16%	16%	15%	15%	17%	15%	15%	14%	15%	15%	16%	20%	15%	16%	18%	19%	16%	17%	17%	15%	17%	18%	19%	21%	24%	18%	19%	20%	18%	16%	16%	16%	17%	15%	14%	17%	15%	15%	15%	18%	16%
2002	16%	15%	15%	19%	16%	16%	15%	16%	17%	15%	15%	15%	15%	15%	17%	20%	15%	17%	18%	19%	16%	17%	17%	15%	18%	18%	19%	21%	26%	18%	20%	20%	18%	16%	16%	17%	17%	15%	14%	18%	15%	15%	16%	19%	16%
2003	17%	15%	16%	20%	17%	17%	16%	17%	19%	17%	17%	16%	17%	17%	18%	22%	16%	18%	19%	21%	17%	18%	20%	16%	19%	19%	21%	23%	37%	19%	21%	21%	20%	17%	17%	18%	19%	16%	15%	19%	16%	16%	17%	21%	17%
2004	18%	16%	17%	23%	18%	18%	17%	18%	20%	18%	18%	17%	18%	18%	19%	25%	17%	19%	20%	24%	19%	19%	23%	17%	20%	21%	23%	27%	37%	20%	23%	24%	22%	19%	19%	19%	20%	17%	17%	22%	17%	17%	18%	22%	19%
2005	19%	17%	19%	26%	20%	18%	18%	19%	21%	18%	19%	18%	19%	18%	20%	28%	18%	21%	22%	26%	20%	21%	24%	19%	23%	23%	26%	37%	45%	21%	28%	27%	25%	21%	20%	21%	22%	19%	19%	25%	19%	18%	19%	23%	20%
2006	20%	18%	20%	28%	21%	19%	19%	20%	22%	19%	20%	18%	20%	19%	20%	28%	18%	21%	23%	27%	21%	22%	25%	20%	24%	24%	26%	42%	42%	22%	31%	28%	26%	22%	20%	20%	22%	19%	20%	28%	20%	18%	20%	27%	21%
2007	20%	19%	20%	28%	21%	19%	20%	20%	22%	20%	21%	19%	20%	19%	20%	29%	19%	23%	24%	28%	22%	22%	25%	20%	25%	25%	27%	43%	46%	23%	32%	29%	27%	22%	21%	20%	23%	20%	20%	29%	22%	18%	22%	28%	21%
2008	22%	20%	22%	32%	23%	20%	21%	22%	25%	21%	22%	20%	22%	20%	21%	32%	20%	25%	26%	33%	23%	24%	28%	22%	28%	27%	30%	49%	60%	25%	37%	34%	30%	25%	22%	21%	24%	22%	21%	35%	23%	19%	23%	34%	23%
2009	20%	19%	20%	28%	21%	20%	20%	21%	21%	20%	21%	19%	20%	20%	20%	26%	18%	22%	23%	27%	21%	22%	25%	20%	26%	23%	25%	39%	51%	22%	31%	29%	26%	21%	21%	19%	22%	20%	20%	29%	21%	19%	21%	29%	21%
2010	21%	20%	22%	31%	22%	21%	21%	22%	23%	21%	22%	20%	21%	22%	22%	28%	20%	24%	25%	29%	22%	23%	27%	22%	28%	27%	28%	45%	69%	25%	37%	33%	29%	23%	22%	21%	24%	22%	23%	34%	23%	20%	23%	35%	23%

Table 26. Balance Tax 2005$ U.S. Billions, 5% SCC, 1980-2010.

Year	United States	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$ 51.3	$ 44.2	$ 27.1	$ (223.1)	$ 7.0	$ 95.2	$ 62.6	$ (30.2)	$ 1.7	$ 48.3	$ 5.7	$ 8.2	$ 3.2	$ 7.8	$ 3.1	$ (3.6)	$ 14.7	$ 5.9	$ 12.6	$ (68.5)	$ (3.6)	$ 0.5	$ 1.1
1981	$ 30.5	$ 40.6	$ 24.4	$ (208.7)	$ 4.6	$ 93.1	$ 57.5	$ (18.6)	$ (0.9)	$ 51.1	$ 6.2	$ 8.2	$ 3.1	$ 7.6	$ 4.4	$ (2.9)	$ 13.0	$ 6.8	$ 12.1	$ (58.1)	$ (1.6)	$ 0.7	$ (0.0)
1982	$ 15.6	$ 37.9	$ 23.5	$ (171.9)	$ 3.7	$ 96.5	$ 51.9	$ (20.5)	$ (2.2)	$ 50.8	$ 6.4	$ 7.6	$ 3.7	$ 6.6	$ 5.3	$ (3.2)	$ 8.8	$ 5.0	$ 10.1	$ (51.6)	$ (0.5)	$ 0.7	$ 0.4
1983	$ 15.7	$ 37.0	$ 21.7	$ (133.1)	$ 3.0	$ 84.9	$ 46.8	$ (22.9)	$ (3.8)	$ 44.3	$ 6.0	$ 7.6	$ 3.3	$ 5.9	$ 5.9	$ (3.3)	$ 9.8	$ 4.3	$ 6.7	$ (47.6)	$ (0.9)	$ 0.9	$ 0.5
1984	$ 15.4	$ 37.4	$ 20.7	$ (137.1)	$ 4.9	$ 82.0	$ 45.6	$ (18.7)	$ (3.3)	$ 42.7	$ 5.7	$ 7.9	$ 3.6	$ 6.0	$ 6.4	$ (3.5)	$ 10.5	$ 4.8	$ 6.7	$ (41.7)	$ (0.0)	$ 0.8	$ 0.6
1985	$ 37.2	$ 36.4	$ 19.6	$ (137.0)	$ 4.5	$ 85.9	$ 44.5	$ (23.1)	$ (1.8)	$ 38.9	$ 5.3	$ 6.7	$ 2.9	$ 5.6	$ 4.6	$ (3.2)	$ 11.2	$ 4.1	$ 6.7	$ (40.6)	$ 0.3	$ 0.6	$ 0.2
1986	$ 71.3	$ 29.2	$ 18.0	$ (91.5)	$ 4.7	$ 58.7	$ 41.4	$ (58.8)	$ (0.7)	$ 24.3	$ 3.2	$ 5.9	$ 2.6	$ 3.3	$ 2.4	$ (1.6)	$ 10.9	$ 2.5	$ 5.4	$ (34.4)	$ 1.8	$ 0.4	$ (0.0)
1987	$ 97.3	$ 33.7	$ 18.1	$ (107.1)	$ 7.5	$ 68.8	$ 43.3	$ (70.4)	$ (0.0)	$ 25.6	$ 3.6	$ 6.5	$ 2.5	$ 3.5	$ 2.8	$ (2.5)	$ 12.2	$ 2.7	$ 5.1	$ (39.6)	$ 2.0	$ 0.9	$ (0.8)
1988	$ 105.8	$ 31.4	$ 16.2	$ (104.7)	$ 8.3	$ 65.3	$ 42.9	$ (68.5)	$ (0.8)	$ 27.6	$ 3.1	$ 6.1	$ 2.6	$ 2.7	$ 2.0	$ (2.1)	$ 11.3	$ 3.0	$ (0.4)	$ (36.6)	$ 1.6	$ 0.4	$ (0.2)
1989	$ 95.1	$ 34.4	$ 17.8	$ (116.8)	$ 8.1	$ 77.1	$ 42.1	$ (52.9)	$ (3.3)	$ 31.6	$ 4.1	$ 6.5	$ 2.9	$ 2.9	$ 2.5	$ (2.5)	$ 10.8	$ 3.6	$ (3.8)	$ (36.3)	$ 1.3	$ 0.3	$ 0.4
1990	$ 98.3	$ 30.8	$ 16.2	$ (64.7)	$ 6.9	$ 83.2	$ 39.7	$ (47.6)	$ (6.6)	$ 25.7	$ 3.9	$ 6.2	$ 2.7	$ 3.2	$ 0.5	$ (3.9)	$ 9.3	$ 3.0	$ (10.0)	$ (59.8)	$ 0.1	$ 0.2	$ 0.8
1991	$ 96.3	$ 24.9	$ 14.8	$ (60.7)	$ 6.4	$ 73.3	$ 33.3	$ (24.0)	$ (8.4)	$ 21.7	$ 3.3	$ 5.3	$ 2.2	$ 2.2	$ (1.1)	$ (2.8)	$ 8.5	$ 2.3	$ (4.3)	$ (40.6)	$ 1.0	$ 0.3	$ 0.5
1992	$ 124.6	$ 26.8	$ 16.5	$ (53.4)	$ 3.3	$ 77.7	$ 35.5	$ (16.7)	$ (5.8)	$ 22.6	$ 3.6	$ 6.1	$ 0.7	$ 0.0	$ (0.4)	$ (2.4)	$ 11.0	$ 2.8	$ (4.1)	$ (81.4)	$ 0.2	$ 0.6	$ 0.2
1993	$ 109.5	$ 29.9	$ 16.7	$ (24.3)	$ 4.0	$ 49.0	$ 36.6	$ (11.9)	$ (4.3)	$ 19.7	$ 3.0	$ 5.8	$ 0.5	$ (0.2)	$ 2.2	$ (2.0)	$ 10.9	$ 2.7	$ (0.9)	$ (80.0)	$ 0.4	$ (0.1)	$ 0.5
1994	$ 105.3	$ 28.9	$ 14.8	$ (26.6)	$ 2.7	$ 36.3	$ 33.1	$ (10.6)	$ (4.8)	$ 18.0	$ 2.8	$ 5.5	$ 0.3	$ 0.4	$ 1.8	$ (2.8)	$ 10.2	$ 2.4	$ (7.7)	$ (30.9)	$ 2.0	$ (0.1)	$ 0.3
1995	$ 126.1	$ 33.2	$ 15.4	$ (42.2)	$ 2.0	$ 29.2	$ 35.1	$ (13.9)	$ (1.3)	$ 17.0	$ 2.5	$ 6.0	$ 0.1	$ (0.0)	$ 1.6	$ (3.2)	$ 11.4	$ 2.2	$ (0.3)	$ (34.5)	$ 2.3	$ 0.2	$ 0.2
1996	$ 96.4	$ 32.7	$ 13.0	$ (20.7)	$ 4.2	$ 42.6	$ 30.1	$ 21.6	$ (3.7)	$ 13.8	$ 2.2	$ 4.8	$ 0.0	$ (0.0)	$ (0.2)	$ (4.4)	$ 11.0	$ 0.9	$ (4.6)	$ (29.8)	$ 1.9	$ (0.1)	$ (0.1)
1997	$ 93.3	$ 33.1	$ 14.0	$ (13.9)	$ 6.1	$ 31.8	$ 29.2	$ 25.4	$ (4.6)	$ 18.9	$ 2.3	$ 5.1	$ 0.6	$ 1.0	$ 2.5	$ (4.3)	$ 10.2	$ 1.8	$ (5.5)	$ (38.8)	$ 1.1	$ (0.0)	$ (0.0)
1998	$ 100.6	$ 28.0	$ 13.2	$ (11.7)	$ 6.8	$ 19.2	$ 24.7	$ 23.5	$ (1.7)	$ 15.4	$ 1.5	$ 4.4	$ 0.2	$ (0.3)	$ (1.1)	$ (3.2)	$ 10.9	$ 1.7	$ (8.2)	$ (35.8)	$ 1.0	$ 0.1	$ (0.4)
1999	$ 110.1	$ 31.9	$ 14.8	$ (17.7)	$ 7.6	$ 12.3	$ 27.2	$ 31.7	$ (2.5)	$ 20.4	$ 3.2	$ 5.2	$ 0.6	$ 0.4	$ 0.1	$ (3.9)	$ 11.6	$ 2.1	$ (8.9)	$ (34.0)	$ 0.9	$ (0.0)	$ (0.1)
2000	$ 88.3	$ 44.6	$ 17.0	$ (15.5)	$ 5.0	$ 17.7	$ 36.8	$ 44.5	$ (1.9)	$ 31.6	$ 5.0	$ 6.2	$ 3.3	$ 6.0	$ 2.7	$ (6.2)	$ 11.8	$ 2.5	$ (10.7)	$ (43.6)	$ (0.6)	$ (0.2)	$ 0.2
2001	$ 80.5	$ 41.5	$ 16.0	$ (14.4)	$ 4.6	$ 26.7	$ 34.1	$ 36.2	$ (3.1)	$ 27.3	$ 4.1	$ 5.3	$ 3.0	$ 4.5	$ 1.3	$ (5.4)	$ 12.0	$ 1.5	$ (7.1)	$ (35.2)	$ 0.8	$ (0.0)	$ (0.2)
2002	$ 96.5	$ 43.0	$ 16.0	$ (11.3)	$ 3.2	$ 36.1	$ 32.3	$ 31.9	$ (2.6)	$ 26.2	$ 3.8	$ 5.1	$ 2.6	$ 3.8	$ 0.3	$ (5.1)	$ 11.3	$ (0.0)	$ (7.3)	$ (41.7)	$ 0.8	$ 0.0	$ (0.5)
2003	$ 106.5	$ 52.9	$ 16.5	$ (11.9)	$ 2.9	$ 56.4	$ 31.8	$ 27.4	$ (9.3)	$ 27.0	$ 3.4	$ 5.2	$ 2.4	$ 2.7	$ (1.4)	$ (6.6)	$ 13.6	$ (0.6)	$ (8.3)	$ (52.4)	$ 2.4	$ 0.0	$ (2.7)
2004	$ 138.5	$ 62.0	$ 19.2	$ (26.5)	$ 5.4	$ 73.1	$ 32.8	$ 30.8	$ (7.3)	$ 34.1	$ 2.7	$ 6.2	$ 3.2	$ 4.9	$ 1.2	$ (9.7)	$ 17.2	$ (0.3)	$ (9.5)	$ (90.4)	$ 1.6	$ (0.2)	$ (4.1)
2005	$ 159.4	$ 72.4	$ 21.4	$ (41.5)	$ 3.7	$ 101.7	$ 41.7	$ 41.0	$ (8.1)	$ 46.4	$ 4.0	$ 7.5	$ 3.7	$ 6.7	$ 4.0	$ (13.2)	$ 20.9	$ 0.5	$ (12.3)	$ (120.6)	$ 1.0	$ (0.2)	$ (4.2)
2006	$ 196.6	$ 71.5	$ 20.8	$ (50.6)	$ 2.1	$ 116.7	$ 40.1	$ 42.8	$ (6.7)	$ 51.7	$ 4.5	$ 8.5	$ 3.5	$ 6.7	$ 4.9	$ (13.7)	$ 24.5	$ (0.1)	$ (14.2)	$ (132.8)	$ 0.8	$ (0.3)	$ (4.3)
2007	$ 214.6	$ 81.3	$ 22.6	$ (53.0)	$ 7.4	$ 134.0	$ 44.2	$ 51.3	$ (3.7)	$ 48.0	$ 4.5	$ 8.9	$ 4.8	$ 8.9	$ 7.2	$ (14.6)	$ 24.8	$ (1.9)	$ (14.9)	$ (171.8)	$ 2.3	$ (0.4)	$ (3.9)
2008	$ 279.9	$ 104.5	$ 25.7	$ (72.4)	$ 5.1	$ 174.7	$ 52.3	$ 55.0	$ (6.4)	$ 62.2	$ 6.4	$ 10.5	$ 5.4	$ 12.3	$ 10.2	$ (17.7)	$ 33.0	$ (3.7)	$ (15.7)	$ (274.7)	$ 3.4	$ (0.1)	$ (5.5)
2009	$ 269.6	$ 76.3	$ 22.1	$ (54.0)	$ 3.9	$ 95.3	$ 31.6	$ 32.9	$ 7.6	$ 40.2	$ 4.1	$ 8.0	$ 3.7	$ 6.5	$ 5.6	$ (9.8)	$ 30.9	$ (0.9)	$ (11.5)	$ (195.3)	$ 4.7	$ 0.6	$ (5.5)
2010	$ 315.6	$ 92.2	$ 21.4	$ (68.7)	$ 9.2	$ 116.9	$ 40.4	$ 55.8	$ 7.1	$ 46.6	$ 6.3	$ 8.7	$ 4.2	$ 5.6	$ 6.2	$ (10.3)	$ 35.3	$ (3.0)	$ (15.2)	$ (208.7)	$ 6.6	$ 1.2	$ (4.7)

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44	World
1980	$ 6.2	$ 0.1	$ (1.2)	$ (1.3)	$ (8.6)	$ 12.1	$ 0.1	$ (1.5)	$ 2.9	$ (1.2)	$ 18.7	$ 2.6	$ 1.6	$ (4.7)	$ 5.7	$ 1.6	$ 3.9	$ 7.0	$ 15.3	$ 7.5	$ (5.8)	$ 132.2	$ 191.0
1981	$ 7.2	$ 0.3	$ (1.2)	$ (1.4)	$ (6.5)	$ 5.0	$ 0.1	$ (1.3)	$ 1.2	$ (1.3)	$ 20.3	$ 2.6	$ 0.9	$ (5.2)	$ 5.2	$ 1.3	$ 3.8	$ 7.1	$ 15.0	$ 6.7	$ (2.9)	$ 129.8	$ 188.5
1982	$ 6.1	$ 0.4	$ (2.0)	$ (1.1)	$ (5.8)	$ 3.1	$ 0.9	$ (2.1)	$ 1.3	$ (1.1)	$ 18.7	$ 2.4	$ 0.4	$ (8.7)	$ 4.4	$ 1.0	$ 0.3	$ 6.7	$ 13.3	$ 6.1	$ (1.8)	$ 127.3	$ 187.5
1983	$ 5.4	$ 0.5	$ (2.8)	$ (0.5)	$ (4.9)	$ 5.0	$ 1.3	$ (1.8)	$ 0.4	$ (1.1)	$ 16.4	$ 1.9	$ 0.1	$ (7.0)	$ 3.6	$ 0.8	$ (2.2)	$ 5.6	$ 10.6	$ 5.9	$ (2.3)	$ 127.7	$ 189.0
1984	$ 5.8	$ 0.6	$ (2.8)	$ (0.1)	$ (6.5)	$ 4.9	$ 1.8	$ (1.3)	$ 0.2	$ (1.1)	$ 13.6	$ 2.1	$ 0.3	$ (5.8)	$ 3.3	$ 0.7	$ (0.7)	$ 6.1	$ 10.8	$ 6.3	$ (1.6)	$ 134.3	$ 198.0
1985	$ 5.1	$ 0.1	$ (4.0)	$ (0.6)	$ (6.6)	$ 2.9	$ 2.0	$ (2.0)	$ 0.0	$ (1.2)	$ 12.9	$ 2.3	$ 0.6	$ (6.5)	$ 3.3	$ 0.5	$ (1.9)	$ 6.2	$ 10.5	$ 6.2	$ (1.9)	$ 137.2	$ 202.5
1986	$ 5.3	$ 0.0	$ (1.1)	$ 1.1	$ (2.9)	$ 2.2	$ 2.4	$ (0.2)	$ 0.7	$ (0.3)	$ 14.3	$ 1.8	$ 1.1	$ (9.4)	$ 3.0	$ 0.4	$ 3.0	$ 5.2	$ 6.7	$ 6.2	$ 0.5	$ 139.0	$ 206.6
1987	$ 4.8	$ (0.2)	$ (2.3)	$ 0.5	$ (4.0)	$ 2.0	$ 2.5	$ (1.4)	$ (0.1)	$ (0.5)	$ 13.5	$ 1.7	$ 0.9	$ (12.6)	$ 3.4	$ 0.4	$ 1.6	$ 5.1	$ 7.2	$ 6.4	$ (1.2)	$ 143.6	$ 212.4
1988	$ 4.7	$ 0.1	$ (2.2)	$ 1.2	$ (3.7)	$ 1.4	$ 2.2	$ (1.2)	$ 0.7	$ (0.3)	$ 13.6	$ 1.3	$ 1.3	$ (11.4)	$ 3.3	$ 0.4	$ 2.8	$ 4.9	$ 6.5	$ 6.3	$ 0.2	$ 149.1	$ 219.4
1989	$ 4.4	$ 0.6	$ (3.4)	$ 0.7	$ (5.4)	$ 1.2	$ 1.2	$ (2.2)	$ 0.4	$ (0.5)	$ 10.8	$ 1.3	$ 0.9	$ (7.3)	$ 4.1	$ 0.4	$ 2.0	$ 4.9	$ 7.5	$ 5.8	$ (0.6)	$ 152.9	$ 222.5
1990	$ 3.7	$ 0.5	$ (7.7)	$ (1.3)	$ (6.7)	$ (0.8)	$ 0.3	$ 0.2	$ 0.4	$ (0.9)	$ 10.1	$ 0.9	$ 0.8	$ (4.8)	$ 3.8	$ 0.4	$ 2.3	$ 3.8	$ 6.8	$ 5.2	$ (1.7)	$ 153.4	$ 223.9
1991	$ 3.9	$ 0.1	$ (10.9)	$ 0.1	$ (6.2)	$ (1.4)	$ 0.5	$ 0.8	$ 0.5	$ (0.8)	$ 10.6	$ 0.7	$ 0.9	$ (7.3)	$ 3.5	$ 0.3	$ 1.6	$ 3.4	$ 5.9	$ 5.7	$ (0.0)	$ 166.3	$ 222.9
1992	$ 4.4	$ 0.2	$ (8.2)	$ 0.8	$ (5.3)	$ (2.4)	$ 0.9	$ 0.8	$ 0.7	$ (0.4)	$ 12.6	$ 0.9	$ 1.0	$ (6.3)	$ 4.3	$ 0.4	$ 2.1	$ 3.6	$ 5.9	$ 5.7	$ (0.5)	$ 189.5	$ 221.7
1993	$ 4.0	$ 0.1	$ (2.7)	$ 0.3	$ (4.0)	$ (3.1)	$ (0.0)	$ 1.0	$ 0.7	$ (0.1)	$ 12.0	$ 0.9	$ 1.3	$ (7.0)	$ 3.6	$ 0.6	$ 3.2	$ 4.2	$ 5.3	$ 4.8	$ 0.5	$ 192.9	$ 223.3
1994	$ 3.7	$ (0.2)	$ (4.5)	$ 0.6	$ (4.8)	$ (3.3)	$ (0.9)	$ 0.5	$ 0.3	$ (0.6)	$ 12.2	$ 0.5	$ 1.5	$ (6.9)	$ 3.1	$ 0.3	$ 1.0	$ 3.9	$ 4.0	$ 5.0	$ (0.8)	$ 196.1	$ 225.2
1995	$ 3.6	$ (0.2)	$ (4.1)	$ 0.6	$ (5.5)	$ (3.4)	$ (2.7)	$ 0.3	$ (0.2)	$ (0.6)	$ 12.8	$ 0.3	$ 1.7	$ (7.6)	$ 3.5	$ 0.2	$ 1.2	$ 3.7	$ 3.2	$ 4.9	$ (1.2)	$ 199.7	$ 229.6
1996	$ 2.9	$ (0.4)	$ (6.7)	$ (0.1)	$ (7.2)	$ (4.1)	$ (5.9)	$ (0.2)	$ (0.3)	$ (1.3)	$ 10.9	$ 0.1	$ 1.4	$ (7.8)	$ 2.6	$ 0.1	$ (0.6)	$ 3.9	$ 3.1	$ 3.6	$ (1.1)	$ 204.6	$ 235.0
1997	$ 2.8	$ (0.3)	$ (9.9)	$ (1.1)	$ (5.7)	$ (4.3)	$ (8.1)	$ 0.3	$ (0.3)	$ (0.7)	$ 10.0	$ (0.0)	$ 1.3	$ (5.2)	$ 2.9	$ 0.6	$ 1.9	$ 4.2	$ 3.7	$ 3.9	$ 0.6	$ 206.1	$ 236.6
1998	$ 3.0	$ (0.5)	$ (6.4)	$ 0.9	$ (3.1)	$ (1.4)	$ (2.7)	$ 0.8	$ (0.0)	$ 0.1	$ 11.4	$ 0.3	$ 1.3	$ (3.7)	$ 2.8	$ 0.6	$ 3.4	$ 3.1	$ 2.6	$ 3.7	$ 1.3	$ 206.2	$ 236.8
1999	$ 3.2	$ (0.3)	$ (8.3)	$ (2.3)	$ (4.7)	$ (1.3)	$ (8.6)	$ (0.8)	$ (0.6)	$ (0.8)	$ 9.6	$ 0.5	$ 1.0	$ (2.7)	$ 3.3	$ 0.5	$ (0.2)	$ 3.3	$ 3.6	$ 3.6	$ (0.8)	$ 209.9	$ 241.1
2000	$ 2.7	$ (0.1)	$ (12.6)	$ (6.2)	$ (8.9)	$ (3.3)	$ (15.4)	$ (1.5)	$ (1.4)	$ (1.9)	$ 7.1	$ 0.9	$ 0.1	$ (0.6)	$ 3.2	$ 0.8	$ (3.3)	$ 4.2	$ 6.5	$ 4.1	$ (1.7)	$ 217.1	$ 249.1
2001	$ 3.1	$ (0.3)	$ (7.1)	$ (6.1)	$ (7.4)	$ (3.0)	$ (12.1)	$ (1.2)	$ (1.1)	$ (1.7)	$ 7.0	$ 1.0	$ 0.1	$ (1.3)	$ 3.0	$ 0.7	$ (1.8)	$ 3.9	$ 5.2	$ 4.0	$ (1.6)	$ 217.3	$ 250.0
2002	$ 3.1	$ (0.8)	$ (8.5)	$ (6.6)	$ (7.6)	$ (3.4)	$ (11.4)	$ (1.9)	$ (1.3)	$ (1.7)	$ 8.4	$ 0.8	$ 0.2	$ (1.7)	$ 3.1	$ 0.7	$ (4.0)	$ 4.5	$ 5.2	$ 2.3	$ (2.6)	$ 221.0	$ 254.6
2003	$ 3.8	$ (1.0)	$ (8.2)	$ (7.5)	$ (9.1)	$ (4.0)	$ (11.9)	$ (1.9)	$ (1.3)	$ (2.1)	$ 7.8	$ 0.7	$ (0.1)	$ (2.3)	$ 2.6	$ 0.8	$ (3.4)	$ 4.2	$ 5.8	$ 3.6	$ (3.2)	$ 231.0	$ 266.1
2004	$ 4.3	$ (1.0)	$ (13.8)	$ (10.8)	$ (15.1)	$ (5.5)	$ (2.8)	$ (3.1)	$ (1.9)	$ (3.7)	$ 3.9	$ 0.4	$ 0.6	$ (2.8)	$ 3.3	$ 0.8	$ (8.2)	$ 4.1	$ 7.6	$ 5.3	$ (3.8)	$ 242.9	$ 279.4
2005	$ 4.0	$ (2.2)	$ (17.9)	$ (15.3)	$ (31.9)	$ (7.6)	$ (3.7)	$ (5.7)	$ (2.8)	$ (5.5)	$ (2.4)	$ 1.0	$ (0.1)	$ (2.7)	$ 3.9	$ 0.5	$ (14.9)	$ 4.6	$ 10.1	$ 7.0	$ (3.2)	$ 250.9	$ 288.8
2006	$ 3.9	$ (3.1)	$ (24.6)	$ (14.8)	$ (40.9)	$ (6.8)	$ (8.9)	$ (7.8)	$ (3.2)	$ (6.2)	$ (1.2)	$ 1.1	$ 1.6	$ (1.4)	$ 4.1	$ 0.8	$ (21.1)	$ 2.8	$ 12.1	$ 6.2	$ (8.2)	$ 257.5	$ 296.5
2007	$ 4.5	$ (3.2)	$ (25.6)	$ (16.7)	$ (46.3)	$ (8.0)	$ (10.1)	$ (9.2)	$ (3.4)	$ (8.0)	$ (1.2)	$ 0.9	$ 2.5	$ (2.1)	$ 4.0	$ 1.4	$ (24.2)	$ 0.4	$ 14.5	$ 3.0	$ (10.2)	$ 263.6	$ 303.2
2008	$ 4.4	$ (4.8)	$ (27.8)	$ (21.4)	$ (55.4)	$ (13.3)	$ (6.2)	$ (12.1)	$ (5.2)	$ (9.9)	$ (5.0)	$ 1.8	$ 3.6	$ (1.0)	$ 4.4	$ 2.3	$ (37.8)	$ 1.8	$ 18.7	$ 3.5	$ (18.4)	$ 266.2	$ 307.1
2009	$ 4.9	$ (4.3)	$ (18.7)	$ (12.3)	$ (39.7)	$ (11.1)	$ (0.2)	$ (8.3)	$ (3.5)	$ (6.4)	$ 7.9	$ 1.3	$ 4.1	$ (1.0)	$ 3.4	$ 2.0	$ (23.7)	$ 1.7	$ 12.8	$ 2.0	$ (12.2)	$ 265.3	$ 305.0
2010	$ 4.5	$ (4.6)	$ (42.7)	$ (16.6)	$ (49.6)	$ (17.7)	$ (12.8)	$ (12.2)	$ (5.2)	$ (9.0)	$ 4.1	$ 1.3	$ 4.3	$ (0.9)	$ 2.9	$ 0.4	$ (37.3)	$ 2.5	$ 15.7	$ 4.3	$ (19.8)	$ 280.0	$ 321.8

Table 27. Balance Tax 2005$ U.S. Billions, 3% SCC, 1980-2010.

Year	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$ 133.4	$ 60.2	$ 34.9	$ (209.1)	$ 11.9	$ 129.3	$ 78.8	$ (5.3)	$ 9.8	$ 66.5	$ 8.1	$ 10.4	$ 4.7	$ 9.9	$ 6.1	$ (1.8)	$ 19.4	$ 9.2	$ 19.8	$ (65.4)	$ (2.4)	$ 1.4	$ 2.4
1981	$ 111.9	$ 55.9	$ 31.9	$ (194.9)	$ 9.3	$ 127.5	$ 73.3	$ 5.6	$ 7.2	$ 68.8	$ 8.6	$ 10.3	$ 4.5	$ 9.7	$ 7.3	$ (1.3)	$ 17.7	$ 9.9	$ 18.8	$ (55.0)	$ (0.4)	$ 1.6	$ 1.2
1982	$ 93.7	$ 53.3	$ 30.9	$ (158.0)	$ 8.3	$ 131.4	$ 67.5	$ 3.1	$ 5.5	$ 68.6	$ 8.8	$ 9.7	$ 5.1	$ 8.6	$ 8.2	$ (1.7)	$ 13.3	$ 8.1	$ 16.7	$ (48.3)	$ 0.7	$ 1.6	$ 1.6
1983	$ 95.3	$ 52.5	$ 29.0	$ (119.2)	$ 7.6	$ 119.9	$ 62.1	$ 0.5	$ 3.9	$ 61.8	$ 8.4	$ 9.7	$ 4.7	$ 7.9	$ 8.8	$ (1.8)	$ 14.4	$ 7.3	$ 12.9	$ (44.0)	$ 0.3	$ 1.8	$ 1.7
1984	$ 101.2	$ 53.4	$ 28.2	$ (122.9)	$ 9.7	$ 118.8	$ 61.5	$ 5.5	$ 4.8	$ 60.7	$ 8.1	$ 10.1	$ 5.1	$ 8.2	$ 9.4	$ (1.9)	$ 15.4	$ 7.9	$ 13.3	$ (37.6)	$ 1.3	$ 1.7	$ 1.8
1985	$ 125.4	$ 52.7	$ 27.2	$ (122.8)	$ 9.3	$ 124.5	$ 60.6	$ 1.3	$ 6.6	$ 56.9	$ 7.7	$ 9.0	$ 4.4	$ 7.8	$ 7.6	$ (1.8)	$ 16.2	$ 7.2	$ 13.7	$ (35.9)	$ 1.7	$ 1.5	$ 1.4
1986	$ 160.8	$ 45.9	$ 25.7	$ (76.9)	$ 9.6	$ 97.6	$ 57.7	$ (34.2)	$ 7.8	$ 42.3	$ 5.6	$ 8.3	$ 4.1	$ 5.6	$ 5.5	$ (0.1)	$ 16.0	$ 5.6	$ 12.9	$ (29.4)	$ 3.3	$ 1.4	$ 1.2
1987	$ 189.6	$ 51.1	$ 26.2	$ (92.4)	$ 12.5	$ 109.3	$ 60.1	$ (45.5)	$ 8.8	$ 44.1	$ 6.1	$ 8.9	$ 4.2	$ 5.9	$ 6.0	$ (0.9)	$ 17.6	$ 5.9	$ 12.9	$ (34.0)	$ 3.7	$ 1.9	$ 0.5
1988	$ 201.4	$ 49.7	$ 24.7	$ (89.9)	$ 13.4	$ 108.5	$ 60.3	$ (42.9)	$ 8.4	$ 46.9	$ 5.6	$ 8.4	$ 4.3	$ 5.0	$ 5.3	$ (0.6)	$ 16.8	$ 6.3	$ 7.3	$ (30.4)	$ 3.4	$ 1.5	$ 1.1
1989	$ 192.9	$ 52.9	$ 26.6	$ (101.7)	$ 13.4	$ 122.0	$ 59.9	$ (26.6)	$ 6.1	$ 51.4	$ 6.7	$ 8.8	$ 4.7	$ 5.2	$ 5.7	$ (1.2)	$ 16.5	$ 7.0	$ 4.0	$ (29.9)	$ 3.3	$ 1.5	$ 1.7
1990	$ 197.0	$ 49.2	$ 25.3	$ (54.2)	$ 12.3	$ 130.2	$ 57.7	$ (20.2)	$ 2.7	$ 45.8	$ 6.5	$ 8.5	$ 4.5	$ 5.5	$ 3.8	$ (2.6)	$ 14.9	$ 6.5	$ (2.5)	$ (53.3)	$ 2.1	$ 1.3	$ 2.1
1991	$ 201.6	$ 44.3	$ 24.7	$ (50.1)	$ 12.3	$ 125.3	$ 52.9	$ 6.9	$ 1.3	$ 43.5	$ 6.2	$ 7.8	$ 4.0	$ 4.8	$ 2.4	$ (1.2)	$ 14.5	$ 6.1	$ 3.7	$ (33.0)	$ 3.4	$ 1.5	$ 1.7
1992	$ 246.3	$ 48.5	$ 27.7	$ (43.2)	$ 10.1	$ 136.2	$ 57.5	$ 18.5	$ 5.2	$ 47.2	$ 7.0	$ 9.0	$ 2.6	$ 3.0	$ 3.4	$ (0.4)	$ 18.0	$ 7.1	$ 4.9	$ (71.7)	$ 3.0	$ 2.1	$ 1.6
1993	$ 235.0	$ 52.2	$ 27.8	$ (15.0)	$ 10.9	$ 107.8	$ 58.4	$ 23.0	$ 7.0	$ 44.3	$ 6.4	$ 8.6	$ 2.3	$ 2.9	$ 5.9	$ 0.1	$ 18.2	$ 7.0	$ 8.5	$ (68.9)	$ 3.5	$ 1.5	$ 1.8
1994	$ 234.0	$ 51.8	$ 26.0	$ (18.6)	$ 9.7	$ 94.8	$ 55.1	$ 24.7	$ 6.9	$ 42.8	$ 6.3	$ 8.5	$ 2.2	$ 3.6	$ 5.6	$ (0.6)	$ 17.7	$ 6.7	$ 2.1	$ (18.5)	$ 5.3	$ 1.5	$ 1.6
1995	$ 257.0	$ 56.6	$ 26.8	$ (34.6)	$ 9.2	$ 88.3	$ 57.6	$ 21.6	$ 10.6	$ 42.0	$ 5.9	$ 9.0	$ 2.1	$ 3.3	$ 5.5	$ (1.1)	$ 19.1	$ 6.6	$ 9.8	$ (20.9)	$ 5.8	$ 1.9	$ 1.6
1996	$ 231.4	$ 56.6	$ 24.6	$ (13.4)	$ 11.6	$ 102.8	$ 52.7	$ 57.2	$ 8.2	$ 39.0	$ 5.7	$ 7.9	$ 2.1	$ 3.4	$ 3.8	$ (2.2)	$ 19.0	$ 5.4	$ 5.6	$ (14.9)	$ 5.5	$ 1.6	$ 1.4
1997	$ 230.1	$ 57.7	$ 25.8	$ (6.7)	$ 13.5	$ 91.1	$ 51.5	$ 60.5	$ 7.5	$ 43.8	$ 5.8	$ 8.3	$ 2.6	$ 4.5	$ 6.5	$ (1.9)	$ 18.3	$ 6.3	$ 4.7	$ (23.1)	$ 4.8	$ 1.7	$ 1.4
1998	$ 239.9	$ 52.9	$ 25.2	$ (5.1)	$ 14.3	$ 75.9	$ 46.7	$ 58.4	$ 10.6	$ 40.5	$ 5.1	$ 7.5	$ 2.3	$ 3.2	$ 3.0	$ (0.8)	$ 19.2	$ 6.1	$ 1.8	$ (19.2)	$ 4.7	$ 1.8	$ 1.0
1999	$ 253.9	$ 57.3	$ 27.1	$ (10.8)	$ 15.3	$ 67.9	$ 49.2	$ 66.7	$ 10.3	$ 45.9	$ 6.9	$ 8.3	$ 2.8	$ 3.9	$ 4.2	$ (1.7)	$ 20.0	$ 6.6	$ 1.0	$ (16.5)	$ 4.7	$ 1.6	$ 1.2
2000	$ 236.8	$ 71.0	$ 29.9	$ (7.9)	$ 12.9	$ 74.5	$ 59.5	$ 80.2	$ 11.4	$ 57.9	$ 8.8	$ 9.5	$ 5.6	$ 9.6	$ 7.0	$ (4.0)	$ 20.3	$ 7.1	$ (0.5)	$ (24.7)	$ 3.5	$ 1.5	$ 1.6
2001	$ 228.2	$ 68.2	$ 29.1	$ (6.6)	$ 12.6	$ 82.6	$ 56.8	$ 71.9	$ 10.2	$ 53.6	$ 7.8	$ 8.5	$ 5.3	$ 8.1	$ 5.6	$ (3.3)	$ 20.8	$ 6.1	$ 3.1	$ (15.1)	$ 4.8	$ 1.6	$ 1.2
2002	$ 246.5	$ 70.3	$ 29.4	$ (3.2)	$ 11.1	$ 92.1	$ 55.1	$ 67.5	$ 11.1	$ 52.7	$ 7.5	$ 8.3	$ 4.9	$ 7.5	$ 4.7	$ (3.2)	$ 20.3	$ 4.6	$ 3.1	$ (19.9)	$ 4.9	$ 1.7	$ 1.0
2003	$ 263.3	$ 81.8	$ 30.6	$ (3.0)	$ 11.1	$ 114.2	$ 54.9	$ 63.5	$ 4.9	$ 54.2	$ 7.3	$ 8.5	$ 4.8	$ 6.5	$ 3.2	$ (4.6)	$ 23.2	$ 4.2	$ 2.5	$ (27.9)	$ 6.7	$ 1.8	$ (1.1)
2004	$ 302.7	$ 92.1	$ 33.9	$ (16.8)	$ 13.8	$ 133.2	$ 56.6	$ 67.9	$ 7.5	$ 62.4	$ 6.7	$ 9.6	$ 5.8	$ 8.9	$ 6.0	$ (7.5)	$ 27.2	$ 4.7	$ 2.1	$ (63.1)	$ 6.3	$ 1.7	$ (2.4)
2005	$ 328.7	$ 103.1	$ 36.6	$ (31.3)	$ 12.3	$ 163.0	$ 65.8	$ 78.2	$ 7.2	$ 75.2	$ 8.1	$ 11.0	$ 6.4	$ 10.7	$ 9.0	$ (10.7)	$ 31.2	$ 5.6	$ (0.4)	$ (90.2)	$ 6.0	$ 1.8	$ (2.4)
2006	$ 368.1	$ 102.6	$ 36.4	$ (39.6)	$ 10.8	$ 178.5	$ 64.4	$ 80.9	$ 8.8	$ 80.8	$ 8.7	$ 12.1	$ 6.2	$ 10.8	$ 10.0	$ (11.0)	$ 35.0	$ 5.1	$ (2.0)	$ (99.0)	$ 5.9	$ 1.8	$ (2.5)
2007	$ 386.9	$ 113.0	$ 38.6	$ (41.2)	$ 16.4	$ 196.3	$ 68.5	$ 90.1	$ 11.9	$ 77.3	$ 8.8	$ 12.4	$ 7.7	$ 13.1	$ 12.4	$ (11.8)	$ 35.6	$ 3.3	$ (2.2)	$ (133.8)	$ 7.6	$ 1.8	$ (1.9)
2008	$ 451.3	$ 135.8	$ 41.8	$ (60.1)	$ 14.2	$ 236.2	$ 76.3	$ 94.2	$ 9.3	$ 91.4	$ 10.8	$ 14.0	$ 8.2	$ 16.5	$ 15.4	$ (14.7)	$ 43.9	$ 1.5	$ (2.4)	$ (233.1)	$ 8.7	$ 2.1	$ (3.5)
2009	$ 438.5	$ 106.9	$ 37.9	$ (42.4)	$ 12.9	$ 154.1	$ 54.8	$ 70.9	$ 23.2	$ 69.3	$ 8.4	$ 11.4	$ 6.4	$ 10.7	$ 10.6	$ (6.7)	$ 42.3	$ 4.3	$ 2.0	$ (148.9)	$ 10.1	$ 2.9	$ (3.5)
2010	$ 492.1	$ 123.9	$ 37.4	$ (56.4)	$ 18.5	$ 179.0	$ 64.3	$ 95.7	$ 23.4	$ 76.5	$ 10.8	$ 12.1	$ 7.0	$ 9.9	$ 11.6	$ (6.9)	$ 47.2	$ 2.4	$ (0.4)	$ (156.7)	$ 12.6	$ 3.7	$ (2.7)

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44	World
1980	$ 8.3	$ 1.2	$ 1.7	$ (0.2)	$ (7.4)	$ 14.4	$ 2.1	$ (1.0)	$ 3.6	$ (0.7)	$ 25.2	$ 3.4	$ 2.4	$ (2.1)	$ 7.1	$ 1.8	$ 7.0	$ 9.0	$ 18.9	$ 9.8	$ (4.5)	$ 432.1	$ 191.0
1981	$ 9.2	$ 1.4	$ 1.8	$ (0.2)	$ (5.4)	$ 6.3	$ 2.2	$ (0.9)	$ 1.8	$ (0.8)	$ 27.1	$ 3.4	$ 1.6	$ (3.0)	$ 6.6	$ 1.5	$ 6.9	$ 9.3	$ 18.5	$ 9.0	$ (1.6)	$ 424.1	$ 188.5
1982	$ 8.0	$ 1.5	$ 1.0	$ 0.1	$ (4.7)	$ 4.3	$ 3.1	$ (1.7)	$ 1.9	$ (0.6)	$ 25.3	$ 3.2	$ 1.1	$ (6.6)	$ 5.8	$ 1.2	$ 3.0	$ 8.8	$ 16.7	$ 8.5	$ (0.6)	$ 416.2	$ 187.5
1983	$ 7.2	$ 1.6	$ 0.3	$ 0.7	$ (3.6)	$ 6.6	$ 3.7	$ (1.3)	$ 0.9	$ (0.6)	$ 22.6	$ 2.7	$ 0.7	$ (4.9)	$ 4.9	$ 1.0	$ 0.2	$ 7.6	$ 13.9	$ 8.3	$ (1.1)	$ 417.3	$ 189.0
1984	$ 7.7	$ 1.7	$ 0.5	$ 1.3	$ (5.2)	$ 6.4	$ 4.5	$ (0.8)	$ 0.7	$ (0.5)	$ 20.1	$ 3.0	$ 0.9	$ (3.5)	$ 4.6	$ 0.9	$ 1.7	$ 8.2	$ 14.3	$ 8.9	$ (0.4)	$ 438.8	$ 198.0
1985	$ 7.0	$ 1.2	$ (0.6)	$ 0.8	$ (5.3)	$ 4.2	$ 4.8	$ (1.6)	$ 0.5	$ (0.7)	$ 19.4	$ 3.2	$ 1.2	$ (4.1)	$ 4.6	$ 0.7	$ 0.3	$ 8.2	$ 14.0	$ 8.9	$ (0.7)	$ 448.4	$ 202.5
1986	$ 7.1	$ 1.1	$ 2.4	$ 2.6	$ (1.8)	$ 3.3	$ 5.5	$ 0.3	$ 1.1	$ 0.2	$ 20.5	$ 2.7	$ 1.7	$ (7.0)	$ 4.3	$ 0.6	$ 5.3	$ 7.2	$ 10.2	$ 9.0	$ 1.7	$ 454.2	$ 206.6
1987	$ 6.7	$ 1.0	$ 1.3	$ 2.1	$ (2.8)	$ 3.0	$ 6.0	$ (0.9)	$ 0.3	$ 0.1	$ 19.8	$ 2.5	$ 1.5	$ (10.1)	$ 4.8	$ 0.6	$ 3.7	$ 7.2	$ 10.8	$ 9.5	$ 0.1	$ 469.5	$ 212.4
1988	$ 6.6	$ 1.2	$ 1.8	$ 2.8	$ (2.6)	$ 2.3	$ 6.1	$ (0.7)	$ 1.1	$ 0.3	$ 20.0	$ 2.1	$ 2.0	$ (8.8)	$ 4.9	$ 0.6	$ 5.1	$ 7.0	$ 10.2	$ 9.4	$ 1.6	$ 487.3	$ 219.4
1989	$ 6.4	$ 1.7	$ 0.8	$ 2.4	$ (4.3)	$ 2.2	$ 5.3	$ (1.6)	$ 0.8	$ 0.1	$ 17.3	$ 2.2	$ 1.7	$ (4.8)	$ 5.7	$ 0.6	$ 4.3	$ 7.1	$ 11.3	$ 8.9	$ 0.6	$ 499.7	$ 222.5
1990	$ 5.6	$ 1.6	$ (3.3)	$ 0.5	$ (5.4)	$ (0.1)	$ 4.8	$ 0.6	$ 0.9	$ (0.2)	$ 16.8	$ 1.8	$ 1.6	$ (2.5)	$ 5.5	$ 0.5	$ 4.8	$ 5.9	$ 10.7	$ 8.6	$ (0.4)	$ 501.4	$ 223.9
1991	$ 6.1	$ 1.1	$ (6.2)	$ 2.3	$ (4.7)	$ (1.1)	$ 5.8	$ 1.0	$ 1.1	$ (0.0)	$ 18.2	$ 1.6	$ 1.8	$ (5.0)	$ 5.4	$ 0.5	$ 4.5	$ 5.6	$ 10.0	$ 9.3	$ 1.5	$ 543.4	$ 222.9
1992	$ 6.8	$ 1.4	$ (2.7)	$ 3.4	$ (3.5)	$ (1.9)	$ 7.1	$ 1.3	$ 1.3	$ 0.6	$ 21.3	$ 2.0	$ 2.0	$ (3.7)	$ 6.5	$ 0.6	$ 5.5	$ 6.1	$ 10.5	$ 10.0	$ 1.3	$ 619.4	$ 221.7
1993	$ 6.3	$ 1.2	$ 3.1	$ 3.1	$ (2.3)	$ (2.8)	$ 6.6	$ 1.6	$ 1.2	$ 1.0	$ 21.0	$ 2.0	$ 2.3	$ (4.3)	$ 5.7	$ 0.8	$ 6.6	$ 6.6	$ 9.9	$ 9.4	$ 2.3	$ 630.6	$ 223.3
1994	$ 6.0	$ 1.0	$ 1.7	$ 3.6	$ (3.0)	$ (3.0)	$ 6.2	$ 1.2	$ 0.9	$ 0.6	$ 21.4	$ 1.6	$ 2.5	$ (4.1)	$ 5.2	$ 0.5	$ 4.4	$ 6.4	$ 8.6	$ 9.3	$ 0.9	$ 640.8	$ 225.2
1995	$ 6.1	$ 0.9	$ 2.5	$ 3.8	$ (3.8)	$ (3.1)	$ 5.0	$ 1.0	$ 0.3	$ 0.7	$ 21.3	$ 1.5	$ 2.7	$ (4.7)	$ 5.7	$ 0.5	$ 4.6	$ 6.3	$ 7.8	$ 9.5	$ 0.6	$ 652.8	$ 229.6
1996	$ 5.4	$ 0.7	$ 0.2	$ 3.3	$ (5.3)	$ (3.7)	$ 2.3	$ 0.5	$ 0.2	$ 0.0	$ 19.9	$ 1.3	$ 2.5	$ (4.7)	$ 4.9	$ 0.4	$ 2.8	$ 6.6	$ 7.7	$ 8.5	$ 0.6	$ 668.8	$ 235.0
1997	$ 5.3	$ 0.9	$ (2.9)	$ 2.4	$ (3.8)	$ (4.0)	$ 0.2	$ 1.0	$ 0.2	$ 0.8	$ 19.3	$ 1.2	$ 2.4	$ (2.0)	$ 5.2	$ 0.9	$ 5.4	$ 6.8	$ 8.3	$ 9.0	$ 2.4	$ 673.6	$ 236.6
1998	$ 5.5	$ 0.7	$ 0.9	$ 3.8	$ (1.2)	$ (0.9)	$ 5.0	$ 1.5	$ 0.5	$ 1.4	$ 20.9	$ 1.5	$ 2.3	$ (0.4)	$ 5.1	$ 0.9	$ 6.9	$ 5.7	$ 7.1	$ 8.8	$ 3.1	$ 673.8	$ 236.8
1999	$ 5.7	$ 0.9	$ (0.6)	$ 0.6	$ (2.8)	$ (0.7)	$ (0.3)	$ (0.1)	$ (0.1)	$ 0.5	$ 19.3	$ 1.7	$ 2.1	$ 0.6	$ 5.7	$ 0.8	$ 3.2	$ 5.9	$ 8.1	$ 8.4	$ 0.8	$ 685.9	$ 241.1
2000	$ 5.3	$ 1.1	$ (4.7)	$ (3.2)	$ (7.0)	$ (2.8)	$ (6.3)	$ (0.8)	$ (0.9)	$ (0.5)	$ 17.3	$ 2.2	$ 1.2	$ 2.9	$ 5.6	$ 1.1	$ 0.2	$ 6.9	$ 11.2	$ 9.3	$ 0.0	$ 709.6	$ 249.1
2001	$ 5.8	$ 0.9	$ 1.1	$ (3.0)	$ (5.4)	$ (2.4)	$ (2.8)	$ (0.5)	$ (0.6)	$ (0.3)	$ 17.1	$ 2.3	$ 1.3	$ 2.2	$ 5.4	$ 1.1	$ 1.6	$ 6.6	$ 9.8	$ 8.8	$ 0.2	$ 710.4	$ 250.0
2002	$ 5.9	$ 0.4	$ (0.0)	$ (3.4)	$ (5.5)	$ (2.9)	$ (1.6)	$ (1.2)	$ (0.8)	$ (0.1)	$ 18.6	$ 2.1	$ 1.3	$ 1.8	$ 5.6	$ 1.1	$ (0.5)	$ 7.3	$ 9.8	$ 7.4	$ (1.0)	$ 722.3	$ 254.6
2003	$ 6.8	$ 0.3	$ 1.2	$ (4.1)	$ (6.8)	$ (3.7)	$ (1.5)	$ (1.0)	$ (0.8)	$ (0.4)	$ 18.3	$ 2.1	$ 1.2	$ 1.4	$ 5.1	$ 1.3	$ 0.3	$ 7.2	$ 10.6	$ 9.0	$ (1.8)	$ 755.1	$ 266.1
2004	$ 7.4	$ 0.4	$ (3.6)	$ (7.1)	$ (12.6)	$ (5.1)	$ 8.2	$ (2.1)	$ (1.4)	$ (2.0)	$ 15.0	$ 1.9	$ 2.0	$ 1.1	$ 5.9	$ 1.3	$ (4.1)	$ 7.3	$ 12.5	$ 11.3	$ (2.0)	$ 793.8	$ 279.4
2005	$ 7.3	$ (0.7)	$ (6.7)	$ (11.5)	$ (29.3)	$ (7.2)	$ 7.6	$ (4.7)	$ (2.2)	$ (3.6)	$ 9.0	$ 2.5	$ 1.4	$ 1.4	$ 6.5	$ 1.1	$ (10.6)	$ 7.9	$ 15.2	$ 13.5	$ (1.2)	$ 820.2	$ 288.8
2006	$ 7.3	$ (1.6)	$ (12.4)	$ (10.8)	$ (38.2)	$ (6.4)	$ 2.9	$ (6.6)	$ (2.5)	$ (4.2)	$ 10.6	$ 2.7	$ 3.2	$ 2.9	$ 6.7	$ 1.5	$ (16.7)	$ 6.3	$ 17.2	$ 13.0	$ (6.1)	$ 841.7	$ 296.5
2007	$ 7.9	$ (1.7)	$ (12.4)	$ (12.5)	$ (43.4)	$ (7.5)	$ 2.1	$ (8.0)	$ (2.8)	$ (6.0)	$ 10.8	$ 2.5	$ 4.1	$ 2.5	$ 6.6	$ 2.2	$ (19.9)	$ 4.0	$ 19.8	$ 10.1	$ (7.9)	$ 861.4	$ 303.2
2008	$ 7.8	$ (3.3)	$ (14.1)	$ (17.0)	$ (52.4)	$ (12.8)	$ 6.3	$ (10.9)	$ (4.6)	$ (7.8)	$ 7.2	$ 3.3	$ 5.4	$ 3.8	$ 7.0	$ 3.3	$ (33.3)	$ 5.5	$ 24.0	$ 10.6	$ (16.0)	$ 870.1	$ 307.1
2009	$ 8.3	$ (2.9)	$ (3.4)	$ (7.5)	$ (36.7)	$ (10.6)	$ 12.6	$ (7.1)	$ (2.8)	$ (4.3)	$ 19.5	$ 2.9	$ 6.0	$ 3.9	$ 6.0	$ 3.1	$ (19.1)	$ 5.4	$ 18.2	$ 9.0	$ (9.8)	$ 867.1	$ 305.0
2010	$ 7.8	$ (3.1)	$ (25.8)	$ (11.5)	$ (46.5)	$ (17.2)	$ 1.0	$ (10.9)	$ (4.5)	$ (6.7)	$ 16.6	$ 3.0	$ 6.4	$ 4.3	$ 5.6	$ 1.8	$ (32.5)	$ 6.4	$ 21.3	$ 11.9	$ (17.4)	$ 915.1	$ 321.8

Table 28. Balance Tax 2005$ U.S. Billions, 2.5% SCC, 1980-2010.

Year	United States	United Kir	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria
1980	$ 200.1	$ 73.3	$ 41.2	$ (197.8)	$ 16.0	$ 157.1	$ 92.0	$ 15.0	$ 16.3	$ 81.3	$ 10.1
1981	$ 178.1	$ 68.4	$ 38.0	$ (183.7)	$ 13.2	$ 155.5	$ 86.1	$ 25.3	$ 13.7	$ 83.3	$ 10.5
1982	$ 157.3	$ 65.7	$ 37.0	$ (146.7)	$ 12.1	$ 159.7	$ 80.1	$ 22.4	$ 11.7	$ 83.1	$ 10.7
1983	$ 159.9	$ 65.0	$ 35.0	$ (107.8)	$ 11.4	$ 148.3	$ 74.6	$ 19.5	$ 10.1	$ 76.1	$ 10.3
1984	$ 171.0	$ 66.4	$ 34.3	$ (111.3)	$ 13.6	$ 148.7	$ 74.4	$ 25.2	$ 11.5	$ 75.3	$ 10.1
1985	$ 197.0	$ 66.0	$ 33.4	$ (111.3)	$ 13.2	$ 155.8	$ 73.7	$ 21.2	$ 13.5	$ 71.5	$ 9.6
1986	$ 233.5	$ 59.5	$ 32.0	$ (65.1)	$ 13.5	$ 129.3	$ 70.9	$ (14.3)	$ 14.7	$ 57.0	$ 7.5
1987	$ 264.7	$ 65.3	$ 32.9	$ (80.4)	$ 16.5	$ 142.3	$ 73.8	$ (25.2)	$ 16.0	$ 59.2	$ 8.0
1988	$ 279.1	$ 64.5	$ 31.6	$ (77.8)	$ 17.6	$ 143.6	$ 74.4	$ (22.0)	$ 15.9	$ 62.5	$ 7.7
1989	$ 272.4	$ 67.9	$ 33.8	$ (89.4)	$ 17.7	$ 158.6	$ 74.4	$ (5.2)	$ 13.7	$ 67.5	$ 8.8
1990	$ 277.2	$ 64.2	$ 32.6	$ (45.7)	$ 16.7	$ 168.4	$ 72.3	$ 2.1	$ 10.3	$ 62.2	$ 8.7
1991	$ 287.2	$ 60.1	$ 32.8	$ (41.5)	$ 17.2	$ 167.6	$ 68.8	$ 32.0	$ 9.3	$ 61.2	$ 8.6
1992	$ 345.2	$ 66.2	$ 36.8	$ (35.0)	$ 15.6	$ 183.8	$ 75.4	$ 47.1	$ 14.1	$ 67.3	$ 9.7
1993	$ 337.0	$ 70.3	$ 36.9	$ (7.4)	$ 16.5	$ 155.6	$ 76.2	$ 51.4	$ 16.1	$ 64.3	$ 9.1
1994	$ 338.7	$ 70.4	$ 35.1	$ (12.1)	$ 15.3	$ 142.3	$ 73.0	$ 53.3	$ 16.3	$ 62.9	$ 9.1
1995	$ 363.4	$ 75.6	$ 36.1	$ (28.4)	$ 14.9	$ 136.3	$ 75.8	$ 50.5	$ 20.2	$ 62.4	$ 8.8
1996	$ 341.1	$ 76.0	$ 34.0	$ (7.5)	$ 17.5	$ 151.8	$ 71.0	$ 86.1	$ 18.0	$ 59.4	$ 8.6
1997	$ 341.3	$ 77.7	$ 35.3	$ (0.9)	$ 19.5	$ 139.3	$ 69.6	$ 89.0	$ 17.4	$ 64.1	$ 8.7
1998	$ 353.1	$ 73.2	$ 34.9	$ 0.2	$ 20.4	$ 121.9	$ 64.7	$ 86.8	$ 20.5	$ 60.9	$ 8.0
1999	$ 370.8	$ 78.0	$ 37.1	$ (5.2)	$ 21.6	$ 113.2	$ 67.1	$ 95.1	$ 20.6	$ 66.7	$ 9.8
2000	$ 357.6	$ 92.4	$ 40.3	$ (1.8)	$ 19.4	$ 120.7	$ 77.9	$ 109.3	$ 22.2	$ 79.2	$ 11.8
2001	$ 348.3	$ 89.9	$ 39.7	$ (0.3)	$ 19.1	$ 128.2	$ 75.2	$ 100.9	$ 21.0	$ 75.0	$ 10.8
2002	$ 368.4	$ 92.6	$ 40.3	$ 3.5	$ 17.6	$ 137.5	$ 73.5	$ 96.4	$ 22.2	$ 74.2	$ 10.6
2003	$ 390.7	$ 105.3	$ 42.0	$ 4.2	$ 17.7	$ 161.3	$ 73.7	$ 92.9	$ 16.5	$ 76.4	$ 10.4
2004	$ 436.2	$ 116.6	$ 45.9	$ (8.9)	$ 20.7	$ 182.1	$ 76.0	$ 97.9	$ 19.6	$ 85.4	$ 10.0
2005	$ 466.2	$ 128.1	$ 49.0	$ (22.9)	$ 19.3	$ 212.8	$ 85.3	$ 108.5	$ 19.6	$ 98.6	$ 11.5
2006	$ 507.6	$ 127.9	$ 49.1	$ (30.6)	$ 18.0	$ 228.7	$ 84.1	$ 111.9	$ 21.4	$ 104.5	$ 12.1
2007	$ 526.9	$ 138.8	$ 51.6	$ (31.7)	$ 23.7	$ 247.0	$ 88.3	$ 121.7	$ 24.6	$ 101.2	$ 12.3
2008	$ 590.6	$ 161.3	$ 54.9	$ (50.0)	$ 21.6	$ 286.2	$ 95.8	$ 126.1	$ 22.1	$ 115.2	$ 14.3
2009	$ 575.7	$ 131.8	$ 50.7	$ (32.9)	$ 20.2	$ 202.0	$ 73.6	$ 101.8	$ 35.8	$ 93.0	$ 11.8
2010	$ 635.6	$ 149.6	$ 50.4	$ (46.5)	$ 26.1	$ 229.4	$ 83.8	$ 128.2	$ 36.7	$ 100.9	$ 14.4

Year	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	$ 12.1	$ 5.9	$ 11.6	$ 8.6	$ (0.4)	$ 23.2	$ 11.8	$ 25.7	$ (62.9)	$ (1.5)	$ 2.2
1981	$ 12.0	$ 5.7	$ 11.4	$ 9.7	$ (0.0)	$ 21.6	$ 12.5	$ 24.3	$ (52.5)	$ 0.6	$ 2.4
1982	$ 11.4	$ 6.3	$ 10.2	$ 10.5	$ (0.5)	$ 17.0	$ 10.6	$ 22.1	$ (45.6)	$ 1.7	$ 2.3
1983	$ 11.4	$ 5.9	$ 9.6	$ 11.1	$ (0.6)	$ 18.2	$ 9.8	$ 18.0	$ (41.1)	$ 1.4	$ 2.6
1984	$ 11.9	$ 6.3	$ 10.0	$ 11.8	$ (0.7)	$ 19.4	$ 10.5	$ 18.6	$ (34.2)	$ 2.5	$ 2.5
1985	$ 10.8	$ 5.7	$ 9.7	$ 10.1	$ (0.6)	$ 20.3	$ 9.7	$ 19.4	$ (32.1)	$ 2.9	$ 2.3
1986	$ 10.2	$ 5.4	$ 7.5	$ 7.9	$ 1.1	$ 20.1	$ 8.1	$ 19.0	$ (25.3)	$ 4.6	$ 2.2
1987	$ 10.8	$ 5.5	$ 7.8	$ 8.5	$ 0.3	$ 21.9	$ 8.5	$ 19.1	$ (29.5)	$ 5.1	$ 2.8
1988	$ 10.3	$ 5.7	$ 6.9	$ 7.9	$ 0.6	$ 21.3	$ 9.0	$ 13.5	$ (25.4)	$ 4.8	$ 2.3
1989	$ 10.7	$ 6.1	$ 7.1	$ 8.4	$ (0.1)	$ 21.1	$ 9.8	$ 10.4	$ (24.8)	$ 4.9	$ 2.4
1990	$ 10.4	$ 5.9	$ 7.4	$ 6.4	$ (1.5)	$ 19.5	$ 9.3	$ 3.5	$ (48.0)	$ 3.8	$ 2.3
1991	$ 9.8	$ 5.4	$ 6.9	$ 5.2	$ 0.1	$ 19.4	$ 9.1	$ 10.3	$ (26.8)	$ 5.4	$ 2.6
1992	$ 11.3	$ 4.1	$ 5.5	$ 6.5	$ 1.2	$ 23.7	$ 10.6	$ 12.2	$ (63.8)	$ 5.4	$ 3.3
1993	$ 11.0	$ 3.9	$ 5.4	$ 9.0	$ 1.8	$ 24.1	$ 10.4	$ 16.1	$ (59.9)	$ 6.0	$ 2.7
1994	$ 10.9	$ 3.8	$ 6.2	$ 8.7	$ 1.2	$ 23.7	$ 10.2	$ 10.0	$ (8.5)	$ 7.9	$ 2.8
1995	$ 11.5	$ 3.7	$ 6.0	$ 8.7	$ 0.6	$ 25.3	$ 10.2	$ 18.0	$ (9.8)	$ 8.5	$ 3.2
1996	$ 10.5	$ 3.7	$ 6.2	$ 7.1	$ (0.4)	$ 25.4	$ 9.0	$ 13.9	$ (2.8)	$ 8.4	$ 3.0
1997	$ 10.8	$ 4.3	$ 7.4	$ 9.7	$ (0.0)	$ 24.8	$ 9.9	$ 13.1	$ (10.3)	$ 7.8	$ 3.1
1998	$ 10.1	$ 4.1	$ 6.1	$ 6.3	$ 1.1	$ 26.0	$ 9.7	$ 10.0	$ (5.8)	$ 7.7	$ 3.2
1999	$ 10.9	$ 4.6	$ 6.8	$ 7.6	$ 0.1	$ 26.9	$ 10.3	$ 9.0	$ (2.2)	$ 7.9	$ 2.9
2000	$ 12.1	$ 7.5	$ 12.6	$ 10.6	$ (2.2)	$ 27.3	$ 10.9	$ 7.8	$ (9.4)	$ 6.8	$ 2.8
2001	$ 11.1	$ 7.2	$ 11.1	$ 9.1	$ (1.6)	$ 27.9	$ 9.9	$ 11.4	$ 1.2	$ 8.0	$ 2.9
2002	$ 10.9	$ 6.8	$ 10.5	$ 8.2	$ (1.7)	$ 27.7	$ 8.4	$ 11.6	$ (2.1)	$ 8.3	$ 3.0
2003	$ 11.1	$ 6.8	$ 9.6	$ 7.0	$ (2.9)	$ 31.0	$ 8.0	$ 11.2	$ (8.0)	$ 10.3	$ 3.2
2004	$ 12.3	$ 7.9	$ 12.2	$ 9.9	$ (5.6)	$ 35.4	$ 8.8	$ 11.4	$ (40.9)	$ 10.1	$ 3.2
2005	$ 13.8	$ 8.5	$ 14.1	$ 13.0	$ (8.7)	$ 39.6	$ 9.7	$ 9.2	$ (65.5)	$ 10.0	$ 3.4
2006	$ 14.9	$ 8.4	$ 14.2	$ 14.2	$ (8.9)	$ 43.6	$ 9.3	$ 7.9	$ (71.5)	$ 10.1	$ 3.5
2007	$ 15.3	$ 10.0	$ 16.5	$ 16.7	$ (9.5)	$ 44.4	$ 7.5	$ 8.2	$ (102.8)	$ 12.0	$ 3.6
2008	$ 16.8	$ 10.5	$ 19.9	$ 19.6	$ (12.2)	$ 52.8	$ 5.8	$ 8.5	$ (199.2)	$ 13.1	$ 4.0
2009	$ 14.1	$ 8.5	$ 14.1	$ 14.7	$ (4.1)	$ 51.6	$ 8.6	$ 13.1	$ (111.1)	$ 14.4	$ 4.9
2010	$ 15.0	$ 9.3	$ 13.4	$ 16.0	$ (4.1)	$ 56.8	$ 6.8	$ 11.6	$ (114.4)	$ 17.5	$ 5.7

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico
1980	$ 3.5	$ 10.0	$ 2.1	$ 4.1	$ 0.7	$ (6.4)	$ 16.2	$ 3.8	$ (0.5)	$ 4.3	$ (0.4)	$ 30.4
1981	$ 2.2	$ 10.8	$ 2.3	$ 4.2	$ 0.8	$ (4.5)	$ 7.4	$ 3.9	$ (0.5)	$ 2.3	$ (0.4)	$ 32.7
1982	$ 2.6	$ 9.5	$ 2.4	$ 3.5	$ 1.1	$ (3.7)	$ 5.2	$ 4.9	$ (1.4)	$ 2.4	$ (0.2)	$ 30.7
1983	$ 2.6	$ 8.7	$ 2.5	$ 2.9	$ 1.7	$ (2.6)	$ 7.8	$ 5.7	$ (1.0)	$ 1.4	$ (0.2)	$ 27.6
1984	$ 2.8	$ 9.3	$ 2.6	$ 3.2	$ 2.4	$ (4.1)	$ 7.7	$ 6.7	$ (0.5)	$ 1.1	$ (0.1)	$ 25.3
1985	$ 2.4	$ 8.5	$ 2.1	$ 2.2	$ 1.9	$ (4.3)	$ 5.3	$ 7.2	$ (1.3)	$ 0.9	$ (0.3)	$ 24.7
1986	$ 2.2	$ 8.7	$ 2.0	$ 5.3	$ 3.7	$ (0.8)	$ 4.1	$ 8.1	$ 0.6	$ 1.5	$ 0.6	$ 25.5
1987	$ 1.5	$ 8.2	$ 1.9	$ 4.3	$ 3.3	$ (1.9)	$ 3.8	$ 8.9	$ (0.5)	$ 0.6	$ 0.5	$ 24.9
1988	$ 2.1	$ 8.1	$ 2.1	$ 5.0	$ 4.1	$ (1.7)	$ 3.1	$ 9.3	$ (0.4)	$ 1.5	$ 0.8	$ 25.1
1989	$ 2.8	$ 8.0	$ 2.6	$ 4.1	$ 3.8	$ (3.3)	$ 3.0	$ 8.7	$ (1.2)	$ 1.2	$ 0.6	$ 22.6
1990	$ 3.1	$ 7.2	$ 2.5	$ 0.2	$ 2.1	$ (4.4)	$ 0.4	$ 8.4	$ 1.0	$ 1.2	$ 0.3	$ 22.4
1991	$ 2.6	$ 7.8	$ 1.9	$ (2.4)	$ 4.0	$ (3.4)	$ (0.8)	$ 10.0	$ 1.3	$ 1.5	$ 0.6	$ 24.4
1992	$ 2.6	$ 8.7	$ 2.3	$ 1.8	$ 5.5	$ (2.1)	$ (1.5)	$ 12.1	$ 1.7	$ 1.8	$ 1.4	$ 28.4
1993	$ 2.9	$ 8.3	$ 2.1	$ 7.8	$ 5.3	$ (0.9)	$ (2.6)	$ 11.9	$ 2.1	$ 1.7	$ 1.9	$ 28.3
1994	$ 2.7	$ 8.0	$ 1.9	$ 6.6	$ 6.0	$ (1.6)	$ (2.7)	$ 12.0	$ 1.8	$ 1.3	$ 1.5	$ 28.9
1995	$ 2.8	$ 8.0	$ 1.8	$ 7.7	$ 6.4	$ (2.3)	$ (2.9)	$ 11.2	$ 1.6	$ 0.7	$ 1.7	$ 28.3
1996	$ 2.6	$ 7.4	$ 1.6	$ 5.9	$ 6.1	$ (3.8)	$ (3.5)	$ 8.9	$ 1.1	$ 0.6	$ 1.2	$ 27.2
1997	$ 2.5	$ 7.3	$ 1.8	$ 2.8	$ 5.2	$ (2.3)	$ (3.7)	$ 7.0	$ 1.6	$ 0.6	$ 1.9	$ 26.9
1998	$ 2.1	$ 7.5	$ 1.6	$ 6.8	$ 6.2	$ 0.3	$ (0.5)	$ 11.2	$ 2.1	$ 0.8	$ 2.5	$ 28.6
1999	$ 2.3	$ 7.8	$ 1.8	$ 5.7	$ 3.0	$ (1.3)	$ (0.2)	$ 6.5	$ 0.5	$ 0.3	$ 1.6	$ 27.2
2000	$ 2.7	$ 7.5	$ 2.0	$ 1.8	$ (0.7)	$ (5.4)	$ (2.3)	$ 1.0	$ (0.2)	$ (0.5)	$ 0.7	$ 25.7
2001	$ 2.4	$ 8.0	$ 1.9	$ 7.8	$ (0.5)	$ (3.8)	$ (2.0)	$ 4.7	$ 0.1	$ (0.3)	$ 0.9	$ 25.3
2002	$ 2.2	$ 8.1	$ 1.5	$ 6.9	$ (0.8)	$ (3.8)	$ (2.5)	$ 6.5	$ (0.6)	$ (0.5)	$ 1.1	$ 26.8
2003	$ 0.1	$ 9.2	$ 1.4	$ 8.8	$ (1.3)	$ (4.9)	$ (3.5)	$ 6.9	$ (0.3)	$ (0.4)	$ 0.9	$ 26.8
2004	$ (1.1)	$ 10.0	$ 1.5	$ 4.8	$ (4.2)	$ (10.6)	$ (4.7)	$ 17.1	$ (1.3)	$ (0.9)	$ (0.5)	$ 23.9
2005	$ (1.0)	$ 9.9	$ 0.5	$ 2.4	$ (8.4)	$ (27.2)	$ (6.9)	$ 16.9	$ (3.8)	$ (1.7)	$ (2.1)	$ 18.2
2006	$ (1.0)	$ 10.0	$ (0.3)	$ (2.6)	$ (7.6)	$ (36.0)	$ (6.0)	$ 12.5	$ (5.7)	$ (2.0)	$ (2.7)	$ 20.2
2007	$ (0.4)	$ 10.7	$ (0.5)	$ (1.8)	$ (9.1)	$ (41.1)	$ (7.2)	$ 12.1	$ (7.1)	$ (2.2)	$ (4.3)	$ 20.6
2008	$ (1.9)	$ 10.6	$ (2.1)	$ (2.9)	$ (13.4)	$ (50.0)	$ (12.5)	$ 16.5	$ (9.9)	$ (4.0)	$ (6.0)	$ 17.1
2009	$ (2.0)	$ 11.0	$ (1.7)	$ 9.0	$ (3.6)	$ (34.2)	$ (10.2)	$ 23.1	$ (6.2)	$ (2.2)	$ (2.5)	$ 29.0
2010	$ (1.1)	$ 10.5	$ (1.9)	$ (12.1)	$ (7.3)	$ (44.0)	$ (16.8)	$ 12.2	$ (10.0)	$ (3.8)	$ (4.8)	$ 26.7

Year	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$ 4.0	$ 3.1	$ (0.0)	$ 8.3	$ 2.0	$ 9.4	$ 10.7	$ 21.8	$ 11.6	$ (3.3)	$ 675.9
1981	$ 4.0	$ 2.1	$ (1.2)	$ 7.7	$ 1.7	$ 9.3	$ 11.0	$ 21.4	$ 10.9	$ (0.5)	$ 663.3
1982	$ 3.9	$ 1.7	$ (4.9)	$ 6.9	$ 1.4	$ 5.2	$ 10.5	$ 19.4	$ 10.4	$ 0.5	$ 650.9
1983	$ 3.4	$ 1.2	$ (3.1)	$ 6.0	$ 1.1	$ 2.1	$ 9.2	$ 16.6	$ 10.2	$ (0.1)	$ 652.6
1984	$ 3.7	$ 1.4	$ (1.7)	$ 5.7	$ 1.1	$ 3.5	$ 9.9	$ 17.1	$ 11.0	$ 0.6	$ 686.3
1985	$ 3.9	$ 1.7	$ (2.2)	$ 5.7	$ 0.8	$ 2.1	$ 9.9	$ 16.9	$ 11.1	$ 0.3	$ 701.4
1986	$ 3.4	$ 2.2	$ (5.0)	$ 5.5	$ 0.7	$ 7.1	$ 8.9	$ 13.1	$ 11.3	$ 2.7	$ 710.4
1987	$ 3.3	$ 2.1	$ (8.1)	$ 6.0	$ 0.8	$ 5.5	$ 8.8	$ 13.7	$ 12.0	$ 1.2	$ 734.3
1988	$ 2.9	$ 2.5	$ (6.7)	$ 6.1	$ 0.8	$ 7.0	$ 8.8	$ 13.2	$ 12.0	$ 2.7	$ 762.1
1989	$ 2.9	$ 2.3	$ (2.8)	$ 7.1	$ 0.8	$ 6.2	$ 8.8	$ 14.4	$ 11.4	$ 1.6	$ 781.6
1990	$ 2.5	$ 2.3	$ (0.7)	$ 6.9	$ 0.7	$ 6.8	$ 7.6	$ 13.8	$ 11.3	$ 0.6	$ 784.2
1991	$ 2.4	$ 2.5	$ (3.2)	$ 7.0	$ 0.6	$ 6.8	$ 7.5	$ 13.4	$ 12.2	$ 2.7	$ 850.0
1992	$ 2.8	$ 2.8	$ (1.6)	$ 8.2	$ 0.8	$ 8.3	$ 8.1	$ 14.2	$ 13.5	$ 2.7	$ 968.9
1993	$ 2.9	$ 3.1	$ (2.2)	$ 7.4	$ 1.0	$ 9.4	$ 8.7	$ 13.6	$ 13.2	$ 3.8	$ 986.3
1994	$ 2.5	$ 3.3	$ (1.9)	$ 7.0	$ 0.7	$ 7.2	$ 8.5	$ 12.4	$ 12.8	$ 2.3	$ 1,002.2
1995	$ 2.4	$ 3.6	$ (2.3)	$ 7.4	$ 0.7	$ 7.3	$ 8.4	$ 11.5	$ 13.2	$ 2.1	$ 1,021.0
1996	$ 2.3	$ 3.4	$ (2.2)	$ 6.7	$ 0.6	$ 5.6	$ 8.7	$ 11.4	$ 12.4	$ 2.1	$ 1,046.1
1997	$ 2.1	$ 3.3	$ 0.6	$ 7.0	$ 1.2	$ 8.1	$ 9.0	$ 11.9	$ 13.1	$ 3.9	$ 1,053.5
1998	$ 2.5	$ 3.2	$ 2.2	$ 7.0	$ 1.2	$ 9.7	$ 7.8	$ 10.8	$ 12.9	$ 4.6	$ 1,053.9
1999	$ 2.7	$ 2.9	$ 3.4	$ 7.6	$ 1.1	$ 5.9	$ 8.1	$ 11.8	$ 12.4	$ 2.2	$ 1,072.9
2000	$ 3.2	$ 2.1	$ 5.7	$ 7.6	$ 1.5	$ 3.0	$ 9.1	$ 14.9	$ 13.4	$ 1.4	$ 1,109.9
2001	$ 3.3	$ 2.2	$ 5.0	$ 7.4	$ 1.4	$ 4.4	$ 8.9	$ 13.6	$ 12.7	$ 1.6	$ 1,111.1
2002	$ 3.2	$ 2.2	$ 4.6	$ 7.6	$ 1.5	$ 2.3	$ 9.6	$ 13.6	$ 11.5	$ 0.3	$ 1,129.7
2003	$ 3.3	$ 2.2	$ 4.4	$ 7.1	$ 1.6	$ 3.4	$ 9.6	$ 14.4	$ 13.4	$ (0.6)	$ 1,181.0
2004	$ 3.1	$ 3.2	$ 4.3	$ 8.0	$ 1.7	$ (0.9)	$ 9.9	$ 16.4	$ 16.2	$ (0.5)	$ 1,241.6
2005	$ 3.7	$ 2.6	$ 4.7	$ 8.6	$ 1.6	$ (7.2)	$ 10.6	$ 19.2	$ 18.7	$ 0.4	$ 1,282.8
2006	$ 3.9	$ 4.5	$ 6.4	$ 8.8	$ 2.0	$ (13.2)	$ 9.1	$ 21.4	$ 18.6	$ (4.4)	$ 1,316.5
2007	$ 3.7	$ 5.5	$ 6.1	$ 8.7	$ 2.9	$ (16.3)	$ 7.0	$ 24.0	$ 15.8	$ (6.1)	$ 1,347.3
2008	$ 4.6	$ 6.8	$ 7.6	$ 9.1	$ 4.2	$ (29.6)	$ 8.5	$ 28.4	$ 16.4	$ (14.0)	$ 1,360.9
2009	$ 4.2	$ 7.6	$ 7.9	$ 8.1	$ 4.1	$ (15.3)	$ 8.5	$ 22.5	$ 14.6	$ (7.9)	$ 1,356.2
2010	$ 4.3	$ 8.1	$ 8.5	$ 7.7	$ 3.0	$ (28.5)	$ 9.6	$ 25.8	$ 18.2	$ (15.5)	$ 1,431.2

Table 29. Balance Tax 2005$ U.S. Billions, Nordhaus SCC, 1980-2010.

Year	United States	United Kir	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria
1980	$ 55.7	$ 45.1	$ 27.6	$ (222.3)	$ 7.2	$ 97.0	$ 63.5	$ (28.8)	$ 2.2	$ 49.3	$ 5.8
1981	$ 34.9	$ 41.4	$ 24.8	$ (207.9)	$ 4.8	$ 94.9	$ 58.3	$ (17.3)	$ (0.4)	$ 52.0	$ 6.3
1982	$ 19.8	$ 38.8	$ 23.9	$ (171.1)	$ 3.9	$ 98.4	$ 52.8	$ (19.2)	$ (1.8)	$ 51.8	$ 6.5
1983	$ 20.0	$ 37.8	$ 22.1	$ (132.4)	$ 3.3	$ 86.8	$ 47.7	$ (21.6)	$ (3.4)	$ 45.2	$ 6.2
1984	$ 20.1	$ 38.3	$ 21.1	$ (136.4)	$ 5.2	$ 84.0	$ 46.5	$ (17.4)	$ (2.9)	$ 43.7	$ 5.9
1985	$ 42.0	$ 37.2	$ 20.0	$ (136.3)	$ 4.7	$ 88.0	$ 45.4	$ (21.8)	$ (1.4)	$ 39.9	$ 5.4
1986	$ 76.2	$ 30.1	$ 18.4	$ (90.7)	$ 5.0	$ 60.8	$ 42.3	$ (57.5)	$ (0.2)	$ 25.3	$ 3.3
1987	$ 102.3	$ 34.6	$ 18.5	$ (106.3)	$ 7.8	$ 71.0	$ 44.2	$ (69.0)	$ 0.5	$ 26.6	$ 3.7
1988	$ 111.0	$ 32.4	$ 16.7	$ (103.9)	$ 8.6	$ 67.7	$ 43.8	$ (67.2)	$ (0.3)	$ 28.7	$ 3.3
1989	$ 100.4	$ 35.4	$ 18.3	$ (116.0)	$ 8.4	$ 79.5	$ 43.1	$ (51.5)	$ (2.8)	$ 32.7	$ 4.2
1990	$ 103.6	$ 31.8	$ 16.7	$ (64.1)	$ 7.2	$ 85.7	$ 40.7	$ (46.2)	$ (6.1)	$ 26.8	$ 4.0
1991	$ 102.0	$ 25.9	$ 15.3	$ (60.2)	$ 6.7	$ 76.2	$ 34.4	$ (22.3)	$ (7.9)	$ 22.9	$ 3.4
1992	$ 131.1	$ 28.0	$ 17.1	$ (52.8)	$ 3.7	$ 80.8	$ 36.6	$ (14.8)	$ (5.2)	$ 23.9	$ 3.8
1993	$ 116.3	$ 31.1	$ 17.3	$ (23.8)	$ 4.4	$ 52.2	$ 37.7	$ (10.0)	$ (3.7)	$ 21.0	$ 3.2
1994	$ 112.3	$ 30.2	$ 15.4	$ (26.2)	$ 3.1	$ 39.5	$ 34.3	$ (8.7)	$ (4.1)	$ 19.4	$ 3.0
1995	$ 133.2	$ 34.4	$ 16.0	$ (41.8)	$ 2.4	$ 32.4	$ 36.3	$ (12.0)	$ (0.7)	$ 18.3	$ 2.6
1996	$ 103.7	$ 34.0	$ 13.6	$ (20.3)	$ 4.6	$ 45.9	$ 31.3	$ 23.5	$ (3.1)	$ 15.2	$ 2.4
1997	$ 100.7	$ 34.5	$ 14.7	$ (13.5)	$ 6.5	$ 35.0	$ 30.4	$ 27.3	$ (3.9)	$ 20.2	$ 2.5
1998	$ 108.1	$ 29.3	$ 13.9	$ (11.4)	$ 7.2	$ 22.3	$ 25.9	$ 25.4	$ (1.1)	$ 16.7	$ 1.7
1999	$ 117.9	$ 33.2	$ 15.4	$ (17.3)	$ 8.0	$ 15.3	$ 28.4	$ 33.6	$ (1.8)	$ 21.7	$ 3.4
2000	$ 96.3	$ 46.0	$ 17.7	$ (15.1)	$ 5.4	$ 20.8	$ 38.0	$ 46.4	$ (1.2)	$ 33.0	$ 5.2
2001	$ 88.5	$ 42.9	$ 16.7	$ (14.0)	$ 5.1	$ 29.7	$ 35.3	$ 38.1	$ (2.4)	$ 28.8	$ 4.3
2002	$ 104.6	$ 44.4	$ 16.7	$ (10.9)	$ 3.6	$ 39.1	$ 33.6	$ 33.8	$ (1.9)	$ 27.6	$ 4.0
2003	$ 114.9	$ 54.5	$ 17.3	$ (11.5)	$ 3.4	$ 59.5	$ 33.0	$ 29.3	$ (8.5)	$ 28.5	$ 3.6
2004	$ 147.3	$ 63.6	$ 20.0	$ (25.9)	$ 5.9	$ 76.3	$ 34.0	$ 32.8	$ (6.5)	$ 35.6	$ 2.9
2005	$ 168.6	$ 74.1	$ 22.2	$ (41.0)	$ 4.2	$ 105.0	$ 43.0	$ 43.0	$ (7.3)	$ 48.0	$ 4.2
2006	$ 205.9	$ 73.2	$ 21.6	$ (50.0)	$ 2.5	$ 120.0	$ 41.5	$ 44.9	$ (5.9)	$ 53.3	$ 4.7
2007	$ 223.9	$ 83.0	$ 23.5	$ (52.3)	$ 7.9	$ 137.4	$ 45.5	$ 53.4	$ (2.9)	$ 49.6	$ 4.8
2008	$ 289.2	$ 106.2	$ 26.6	$ (71.8)	$ 5.6	$ 178.1	$ 53.6	$ 57.1	$ (5.5)	$ 63.7	$ 6.6
2009	$ 278.7	$ 78.0	$ 22.9	$ (53.4)	$ 4.4	$ 98.5	$ 32.9	$ 35.0	$ 8.4	$ 41.8	$ 4.3
2010	$ 325.1	$ 93.9	$ 22.2	$ (68.1)	$ 9.7	$ 120.2	$ 41.7	$ 57.9	$ 8.0	$ 48.2	$ 6.6

Year	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia
1980	$ 8.3	$ 3.3	$ 7.9	$ 3.3	$ (3.5)	$ 14.9	$ 6.1	$ 13.0	$ (68.3)	$ (3.5)	$ 0.6
1981	$ 8.3	$ 3.1	$ 7.8	$ 4.6	$ (2.8)	$ 13.2	$ 6.9	$ 12.4	$ (57.9)	$ (1.5)	$ 0.7
1982	$ 7.7	$ 3.7	$ 6.7	$ 5.5	$ (3.1)	$ 9.0	$ 5.2	$ 10.4	$ (51.4)	$ (0.4)	$ 0.7
1983	$ 7.7	$ 3.4	$ 6.0	$ 6.1	$ (3.2)	$ 10.1	$ 4.5	$ 7.0	$ (47.4)	$ (0.8)	$ 1.0
1984	$ 8.1	$ 3.7	$ 6.1	$ 6.5	$ (3.4)	$ 10.8	$ 5.0	$ 7.0	$ (41.5)	$ 0.0	$ 0.8
1985	$ 6.9	$ 3.0	$ 5.7	$ 4.8	$ (3.1)	$ 11.5	$ 4.2	$ 7.1	$ (40.3)	$ 0.4	$ 0.6
1986	$ 6.1	$ 2.7	$ 3.4	$ 2.6	$ (1.6)	$ 11.2	$ 2.6	$ 5.9	$ (34.1)	$ 1.9	$ 0.4
1987	$ 6.6	$ 2.6	$ 3.6	$ 3.0	$ (2.4)	$ 12.5	$ 2.9	$ 5.6	$ (39.3)	$ 2.1	$ 0.9
1988	$ 6.2	$ 2.7	$ 2.8	$ 2.2	$ (2.0)	$ 11.6	$ 3.2	$ 0.0	$ (36.2)	$ 1.7	$ 0.4
1989	$ 6.6	$ 3.0	$ 3.0	$ 2.7	$ (2.5)	$ 11.1	$ 3.8	$ (3.4)	$ (35.9)	$ 1.4	$ 0.4
1990	$ 6.3	$ 2.8	$ 3.3	$ 0.7	$ (3.8)	$ 9.6	$ 3.2	$ (9.6)	$ (59.4)	$ 0.2	$ 0.2
1991	$ 5.4	$ 2.3	$ 2.3	$ (0.9)	$ (2.7)	$ 8.8	$ 2.5	$ (3.9)	$ (40.2)	$ 1.2	$ 0.3
1992	$ 6.3	$ 0.8	$ 0.2	$ (0.2)	$ (2.3)	$ 11.4	$ 3.1	$ (3.6)	$ (80.9)	$ 0.3	$ 0.7
1993	$ 5.9	$ 0.6	$ (0.0)	$ 2.4	$ (1.9)	$ 11.3	$ 2.9	$ (0.4)	$ (79.4)	$ 0.6	$ 0.0
1994	$ 5.6	$ 0.4	$ 0.6	$ 2.0	$ (2.6)	$ 10.6	$ 2.6	$ (7.1)	$ (30.2)	$ 2.2	$ (0.0)
1995	$ 6.1	$ 0.2	$ 0.1	$ 1.8	$ (3.1)	$ 11.8	$ 2.5	$ 0.3	$ (33.7)	$ 2.5	$ 0.3
1996	$ 5.0	$ 0.2	$ 0.2	$ 0.1	$ (4.3)	$ 11.4	$ 1.2	$ (4.1)	$ (29.0)	$ 2.1	$ (0.0)
1997	$ 5.3	$ 0.7	$ 1.2	$ 2.7	$ (4.1)	$ 10.6	$ 2.1	$ (5.0)	$ (38.0)	$ 1.3	$ 0.1
1998	$ 4.6	$ 0.3	$ (0.1)	$ (0.8)	$ (3.1)	$ 11.4	$ 1.9	$ (7.6)	$ (34.9)	$ 1.2	$ 0.2
1999	$ 5.4	$ 0.7	$ 0.6	$ 0.3	$ (3.8)	$ 12.0	$ 2.4	$ (8.4)	$ (33.1)	$ 1.1	$ 0.1
2000	$ 6.4	$ 3.4	$ 6.2	$ 3.0	$ (6.0)	$ 12.2	$ 2.7	$ (10.2)	$ (42.6)	$ (0.3)	$ (0.1)
2001	$ 5.5	$ 3.1	$ 4.7	$ 1.5	$ (5.2)	$ 12.5	$ 1.8	$ (6.5)	$ (34.1)	$ 1.0	$ 0.0
2002	$ 5.3	$ 2.7	$ 4.0	$ 0.5	$ (5.0)	$ 11.8	$ 0.2	$ (6.7)	$ (40.6)	$ 1.0	$ 0.1
2003	$ 5.4	$ 2.5	$ 2.9	$ (1.1)	$ (6.5)	$ 14.1	$ (0.4)	$ (7.7)	$ (51.1)	$ 2.6	$ 0.1
2004	$ 6.4	$ 3.3	$ 5.1	$ 1.4	$ (9.6)	$ 17.8	$ 0.0	$ (8.8)	$ (88.9)	$ 1.9	$ (0.1)
2005	$ 7.7	$ 3.9	$ 6.9	$ 4.3	$ (13.1)	$ 21.5	$ 0.8	$ (11.7)	$ (119.0)	$ 1.3	$ (0.1)
2006	$ 8.7	$ 3.7	$ 6.9	$ 5.2	$ (13.5)	$ 25.1	$ 0.2	$ (13.6)	$ (131.0)	$ 1.1	$ (0.1)
2007	$ 9.1	$ 5.0	$ 9.1	$ 7.5	$ (14.5)	$ 25.4	$ (1.6)	$ (14.2)	$ (169.8)	$ 2.6	$ (0.3)
2008	$ 10.7	$ 5.5	$ 12.5	$ 10.5	$ (17.5)	$ 33.6	$ (3.5)	$ (15.0)	$ (272.5)	$ 3.7	$ (0.0)
2009	$ 8.2	$ 3.9	$ 6.7	$ 5.9	$ (9.6)	$ 31.5	$ (0.6)	$ (10.8)	$ (192.8)	$ 5.0	$ 0.7
2010	$ 8.8	$ 4.4	$ 5.8	$ 6.5	$ (10.1)	$ 36.0	$ (2.7)	$ (14.4)	$ (205.9)	$ 6.9	$ 1.4

Year	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico
1980	$ 1.2	$ 6.3	$ 0.2	$ (1.0)	$ (1.3)	$ (8.5)	$ 12.2	$ 0.2	$ (1.5)	$ 2.9	$ (1.1)	$ 19.0
1981	$ 0.1	$ 7.3	$ 0.3	$ (1.0)	$ (1.3)	$ (6.4)	$ 5.1	$ 0.2	$ (1.3)	$ 1.2	$ (1.2)	$ 20.7
1982	$ 0.5	$ 6.2	$ 0.4	$ (1.8)	$ (1.0)	$ (5.8)	$ 3.2	$ 1.0	$ (2.1)	$ 1.3	$ (1.0)	$ 19.1
1983	$ 0.5	$ 5.5	$ 0.6	$ (2.6)	$ (0.5)	$ (4.8)	$ 5.1	$ 1.4	$ (1.7)	$ 0.4	$ (1.1)	$ 16.7
1984	$ 0.6	$ 5.9	$ 0.7	$ (2.6)	$ (0.0)	$ (6.4)	$ 5.0	$ 1.9	$ (1.3)	$ 0.2	$ (1.0)	$ 14.0
1985	$ 0.3	$ 5.2	$ 0.2	$ (3.8)	$ (0.5)	$ (6.6)	$ 3.0	$ 2.2	$ (2.0)	$ 0.0	$ (1.2)	$ 13.2
1986	$ 0.0	$ 5.4	$ 0.1	$ (0.9)	$ 1.2	$ (2.9)	$ 2.3	$ 2.6	$ (0.1)	$ 0.7	$ (0.3)	$ 14.6
1987	$ (0.7)	$ 4.9	$ (0.1)	$ (2.1)	$ 0.6	$ (3.9)	$ 2.0	$ 2.7	$ (1.4)	$ (0.0)	$ (0.4)	$ 13.8
1988	$ (0.1)	$ 4.8	$ 0.1	$ (2.0)	$ 1.3	$ (3.6)	$ 1.4	$ 2.4	$ (1.1)	$ 0.7	$ (0.3)	$ 14.0
1989	$ 0.5	$ 4.5	$ 0.6	$ (3.2)	$ 0.8	$ (5.3)	$ 1.3	$ 1.4	$ (2.1)	$ 0.4	$ (0.5)	$ 11.2
1990	$ 0.9	$ 3.8	$ 0.6	$ (7.4)	$ (1.2)	$ (6.6)	$ (0.8)	$ 0.6	$ 0.2	$ 0.4	$ (0.9)	$ 10.4
1991	$ 0.5	$ 4.1	$ 0.1	$ (10.7)	$ 0.2	$ (6.1)	$ (1.4)	$ 0.8	$ 0.8	$ 0.5	$ (0.8)	$ 11.0
1992	$ 0.3	$ 4.5	$ 0.3	$ (7.9)	$ 0.9	$ (5.2)	$ (2.3)	$ 1.2	$ 0.9	$ 0.7	$ (0.3)	$ 13.0
1993	$ 0.6	$ 4.1	$ 0.1	$ (2.4)	$ 0.4	$ (3.9)	$ (3.1)	$ 0.3	$ 1.0	$ 0.7	$ (0.0)	$ 12.5
1994	$ 0.3	$ 3.8	$ (0.1)	$ (4.1)	$ 0.8	$ (4.7)	$ (3.3)	$ (0.5)	$ 0.5	$ 0.3	$ (0.5)	$ 12.7
1995	$ 0.3	$ 3.8	$ (0.2)	$ (3.7)	$ 0.8	$ (5.4)	$ (3.4)	$ (2.3)	$ 0.3	$ (0.2)	$ (0.5)	$ 13.2
1996	$ 0.0	$ 3.1	$ (0.3)	$ (6.4)	$ 0.1	$ (7.1)	$ (4.0)	$ (5.4)	$ (0.2)	$ (0.3)	$ (1.3)	$ 11.4
1997	$ 0.1	$ 3.0	$ (0.2)	$ (9.5)	$ (0.9)	$ (5.6)	$ (4.3)	$ (7.7)	$ 0.3	$ (0.2)	$ (0.6)	$ 10.6
1998	$ (0.3)	$ 3.1	$ (0.4)	$ (6.0)	$ 1.0	$ (3.0)	$ (1.4)	$ (2.3)	$ 0.8	$ 0.0	$ 0.2	$ 11.9
1999	$ (0.1)	$ 3.3	$ (0.2)	$ (7.8)	$ (2.1)	$ (4.6)	$ (1.2)	$ (8.2)	$ (0.8)	$ (0.5)	$ (0.8)	$ 10.1
2000	$ 0.2	$ 2.8	$ (0.1)	$ (12.2)	$ (6.1)	$ (8.8)	$ (3.3)	$ (14.9)	$ (1.5)	$ (1.3)	$ (1.8)	$ 7.6
2001	$ (0.1)	$ 3.2	$ (0.2)	$ (6.6)	$ (5.9)	$ (7.3)	$ (2.9)	$ (11.6)	$ (1.1)	$ (1.1)	$ (1.6)	$ 7.5
2002	$ (0.4)	$ 3.2	$ (0.8)	$ (8.0)	$ (6.5)	$ (7.5)	$ (3.4)	$ (10.9)	$ (1.9)	$ (1.2)	$ (1.6)	$ 9.0
2003	$ (2.6)	$ 3.9	$ (1.0)	$ (7.7)	$ (7.3)	$ (9.0)	$ (4.0)	$ (11.3)	$ (1.9)	$ (1.3)	$ (2.0)	$ 8.4
2004	$ (4.0)	$ 4.4	$ (1.0)	$ (13.3)	$ (10.6)	$ (14.9)	$ (5.5)	$ (2.2)	$ (3.0)	$ (1.9)	$ (3.6)	$ 4.5
2005	$ (4.1)	$ 4.2	$ (2.1)	$ (17.3)	$ (15.1)	$ (31.8)	$ (7.6)	$ (3.1)	$ (5.7)	$ (2.7)	$ (5.4)	$ (1.8)
2006	$ (4.2)	$ 4.1	$ (3.0)	$ (23.9)	$ (14.6)	$ (40.8)	$ (6.8)	$ (8.3)	$ (7.7)	$ (3.1)	$ (6.1)	$ (0.6)
2007	$ (3.7)	$ 4.7	$ (3.1)	$ (24.8)	$ (16.5)	$ (46.2)	$ (7.9)	$ (9.5)	$ (9.1)	$ (3.4)	$ (7.9)	$ (0.6)
2008	$ (5.4)	$ 4.6	$ (4.8)	$ (27.1)	$ (21.2)	$ (55.2)	$ (13.3)	$ (5.5)	$ (12.0)	$ (5.2)	$ (9.8)	$ (4.3)
2009	$ (5.4)	$ 5.1	$ (4.2)	$ (17.9)	$ (12.0)	$ (39.6)	$ (11.1)	$ 0.5	$ (8.3)	$ (3.5)	$ (6.3)	$ 8.5
2010	$ (4.6)	$ 4.7	$ (4.5)	$ (41.8)	$ (16.3)	$ (49.5)	$ (17.7)	$ (12.1)	$ (12.1)	$ (5.1)	$ (8.9)	$ 4.8

Year	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$ 2.6	$ 1.7	$ (4.6)	$ 5.8	$ 1.6	$ 4.1	$ 7.1	$ 15.5	$ 7.6	$ (5.7)	$ 148.4
1981	$ 2.6	$ 0.9	$ (5.1)	$ 5.3	$ 1.3	$ 4.0	$ 7.2	$ 15.2	$ 6.8	$ (2.9)	$ 145.7
1982	$ 2.4	$ 0.5	$ (8.6)	$ 4.5	$ 1.0	$ 0.5	$ 6.8	$ 13.5	$ 6.2	$ (1.8)	$ 142.9
1983	$ 1.9	$ 0.1	$ (6.9)	$ 3.6	$ 0.8	$ (2.1)	$ 5.7	$ 10.8	$ 6.0	$ (2.2)	$ 143.3
1984	$ 2.2	$ 0.4	$ (5.7)	$ 3.3	$ 0.7	$ (0.5)	$ 6.2	$ 11.0	$ 6.4	$ (1.5)	$ 150.7
1985	$ 2.4	$ 0.6	$ (6.3)	$ 3.4	$ 0.5	$ (1.7)	$ 6.3	$ 10.7	$ 6.4	$ (1.8)	$ 154.0
1986	$ 1.8	$ 1.1	$ (9.3)	$ 3.0	$ 0.4	$ 3.2	$ 5.3	$ 6.9	$ 6.4	$ 0.5	$ 156.0
1987	$ 1.7	$ 0.9	$ (12.4)	$ 3.4	$ 0.4	$ 1.7	$ 5.2	$ 7.4	$ 6.6	$ (1.1)	$ 161.3
1988	$ 1.3	$ 1.3	$ (11.2)	$ 3.4	$ 0.4	$ 2.9	$ 5.0	$ 6.7	$ 6.5	$ 0.3	$ 167.4
1989	$ 1.3	$ 1.0	$ (7.2)	$ 4.2	$ 0.4	$ 2.1	$ 5.1	$ 7.7	$ 6.0	$ (0.6)	$ 171.6
1990	$ 1.0	$ 0.9	$ (4.6)	$ 3.9	$ 0.4	$ 2.4	$ 3.9	$ 7.0	$ 5.4	$ (1.6)	$ 172.2
1991	$ 0.8	$ 1.0	$ (7.1)	$ 3.6	$ 0.3	$ 1.7	$ 3.5	$ 6.1	$ 5.9	$ 0.0	$ 186.7
1992	$ 1.0	$ 1.1	$ (6.1)	$ 4.4	$ 0.4	$ 2.3	$ 3.7	$ 6.1	$ 6.0	$ (0.4)	$ 212.8
1993	$ 0.9	$ 1.3	$ (6.8)	$ 3.7	$ 0.6	$ 3.4	$ 4.3	$ 5.5	$ 5.0	$ 0.6	$ 216.6
1994	$ 0.5	$ 1.5	$ (6.7)	$ 3.3	$ 0.3	$ 1.2	$ 4.0	$ 4.3	$ 5.2	$ (0.8)	$ 220.1
1995	$ 0.4	$ 1.8	$ (7.4)	$ 3.6	$ 0.3	$ 1.4	$ 3.9	$ 3.4	$ 5.1	$ (1.1)	$ 224.2
1996	$ 0.2	$ 1.5	$ (7.6)	$ 2.8	$ 0.1	$ (0.5)	$ 4.0	$ 3.4	$ 3.9	$ (1.0)	$ 229.7
1997	$ 0.0	$ 1.4	$ (5.0)	$ 3.1	$ 0.6	$ 2.1	$ 4.3	$ 4.0	$ 4.1	$ 0.7	$ 231.4
1998	$ 0.4	$ 1.3	$ (3.5)	$ 2.9	$ 0.6	$ 3.6	$ 3.2	$ 2.8	$ 3.9	$ 1.4	$ 231.4
1999	$ 0.6	$ 1.1	$ (2.6)	$ 3.5	$ 0.5	$ 0.0	$ 3.4	$ 3.8	$ 3.8	$ (0.7)	$ 235.6
2000	$ 1.0	$ 0.2	$ (0.4)	$ 3.3	$ 0.8	$ (3.1)	$ 4.3	$ 6.8	$ 4.4	$ (1.6)	$ 243.7
2001	$ 1.1	$ 0.2	$ (1.1)	$ 3.1	$ 0.7	$ (1.7)	$ 4.0	$ 5.5	$ 4.3	$ (1.5)	$ 244.0
2002	$ 0.9	$ 0.2	$ (1.5)	$ 3.3	$ 0.7	$ (3.8)	$ 4.6	$ 5.5	$ 2.6	$ (2.5)	$ 248.1
2003	$ 0.8	$ (0.0)	$ (2.1)	$ 2.7	$ 0.8	$ (3.2)	$ 4.4	$ 6.1	$ 3.9	$ (3.2)	$ 259.4
2004	$ 0.5	$ 0.7	$ (2.6)	$ 3.5	$ 0.8	$ (7.9)	$ 4.3	$ 7.8	$ 5.6	$ (3.7)	$ 272.6
2005	$ 1.1	$ (0.1)	$ (2.5)	$ 4.0	$ 0.5	$ (14.7)	$ 4.8	$ 10.4	$ 7.3	$ (3.1)	$ 281.7
2006	$ 1.2	$ 1.7	$ (1.2)	$ 4.3	$ 0.8	$ (20.8)	$ 3.0	$ 12.4	$ 6.5	$ (8.1)	$ 289.1
2007	$ 1.0	$ 2.6	$ (1.8)	$ 4.1	$ 1.4	$ (24.0)	$ 0.6	$ 14.8	$ 3.4	$ (10.1)	$ 295.9
2008	$ 1.9	$ 3.7	$ (0.7)	$ 4.5	$ 2.3	$ (37.6)	$ 2.0	$ 19.0	$ 3.8	$ (18.2)	$ 298.8
2009	$ 1.4	$ 4.2	$ (0.7)	$ 3.5	$ 2.0	$ (23.4)	$ 1.9	$ 13.1	$ 2.4	$ (12.1)	$ 297.8
2010	$ 1.4	$ 4.4	$ (0.6)	$ 3.1	$ 0.5	$ (37.1)	$ 2.7	$ 16.0	$ 4.7	$ (19.6)	$ 314.3

Table 30. Balance Tax 2005$ U.S. Billions, Stern SCC, 1980-2010.

Year	United States	United Kir	Spain	Russia	Netherlan	Japan	Italy	Germany	Canada	France	Austria
1980	$ 457.9	$ 123.6	$ 65.5	$ (154.0)	$ 31.6	$ 264.3	$ 142.9	$ 93.3	$ 41.6	$ 138.3	$ 17.8
1981	$ 434.0	$ 116.5	$ 61.5	$ (140.4)	$ 28.2	$ 263.6	$ 135.8	$ 101.5	$ 39.1	$ 139.1	$ 17.9
1982	$ 402.8	$ 113.9	$ 60.3	$ (103.1)	$ 26.6	$ 269.2	$ 129.0	$ 96.6	$ 35.8	$ 139.1	$ 18.1
1983	$ 409.8	$ 113.7	$ 58.1	$ (64.0)	$ 25.8	$ 258.2	$ 122.7	$ 93.0	$ 34.2	$ 131.2	$ 17.8
1984	$ 440.6	$ 116.7	$ 58.0	$ (66.6)	$ 28.5	$ 264.2	$ 124.4	$ 101.3	$ 37.1	$ 131.6	$ 17.6
1985	$ 473.8	$ 117.4	$ 57.3	$ (66.7)	$ 28.3	$ 277.0	$ 124.4	$ 97.9	$ 40.0	$ 128.0	$ 17.2
1986	$ 514.6	$ 111.9	$ 56.2	$ (19.5)	$ 28.8	$ 251.5	$ 122.1	$ 62.8	$ 41.4	$ 113.7	$ 15.1
1987	$ 554.9	$ 120.2	$ 58.4	$ (34.2)	$ 32.1	$ 269.6	$ 126.6	$ 53.0	$ 43.8	$ 117.2	$ 15.7
1988	$ 579.4	$ 121.8	$ 58.4	$ (31.1)	$ 33.6	$ 279.3	$ 129.2	$ 58.6	$ 44.9	$ 122.9	$ 15.6
1989	$ 579.8	$ 125.8	$ 61.5	$ (41.9)	$ 34.2	$ 299.9	$ 130.3	$ 77.6	$ 43.1	$ 129.7	$ 16.9
1990	$ 587.2	$ 122.0	$ 61.1	$ (12.9)	$ 33.8	$ 316.1	$ 128.8	$ 88.4	$ 39.5	$ 125.4	$ 17.1
1991	$ 618.0	$ 121.1	$ 64.0	$ (8.1)	$ 35.9	$ 330.9	$ 130.2	$ 129.1	$ 39.8	$ 129.5	$ 17.9
1992	$ 727.5	$ 134.5	$ 72.0	$ (3.1)	$ 36.8	$ 367.9	$ 144.5	$ 157.6	$ 48.6	$ 144.8	$ 20.3
1993	$ 731.3	$ 140.2	$ 71.8	$ 21.7	$ 38.0	$ 340.4	$ 144.9	$ 161.1	$ 51.5	$ 141.4	$ 19.8
1994	$ 743.1	$ 142.3	$ 70.4	$ 13.0	$ 37.2	$ 325.9	$ 142.2	$ 164.0	$ 52.9	$ 140.7	$ 19.8
1995	$ 774.7	$ 149.0	$ 72.0	$ (4.5)	$ 37.3	$ 321.8	$ 146.4	$ 162.2	$ 57.4	$ 141.1	$ 19.7
1996	$ 765.1	$ 151.1	$ 70.6	$ 15.4	$ 40.5	$ 340.9	$ 141.9	$ 197.9	$ 55.6	$ 138.4	$ 19.8
1997	$ 771.0	$ 155.1	$ 72.1	$ 21.6	$ 42.7	$ 325.6	$ 139.7	$ 199.3	$ 55.4	$ 142.4	$ 19.8
1998	$ 790.8	$ 151.5	$ 72.4	$ 21.0	$ 43.9	$ 299.9	$ 134.0	$ 196.4	$ 59.1	$ 139.9	$ 19.2
1999	$ 822.4	$ 157.9	$ 75.8	$ 16.6	$ 45.9	$ 288.1	$ 136.3	$ 205.0	$ 60.7	$ 146.9	$ 21.2
2000	$ 824.3	$ 175.2	$ 80.6	$ 21.9	$ 44.4	$ 299.2	$ 149.0	$ 221.6	$ 64.0	$ 161.8	$ 23.5
2001	$ 812.5	$ 174.0	$ 80.8	$ 24.2	$ 44.2	$ 304.1	$ 146.5	$ 213.1	$ 62.9	$ 157.7	$ 22.5
2002	$ 839.6	$ 178.6	$ 82.3	$ 29.1	$ 42.6	$ 313.4	$ 144.9	$ 208.3	$ 65.2	$ 157.4	$ 22.4
2003	$ 883.3	$ 196.0	$ 86.2	$ 32.2	$ 43.3	$ 343.0	$ 146.5	$ 206.5	$ 61.1	$ 161.9	$ 22.6
2004	$ 952.1	$ 211.1	$ 92.1	$ 21.5	$ 47.2	$ 371.2	$ 150.9	$ 214.2	$ 66.1	$ 174.2	$ 22.6
2005	$ 997.7	$ 224.6	$ 96.8	$ 9.4	$ 46.3	$ 405.4	$ 160.9	$ 225.6	$ 67.5	$ 189.0	$ 24.4
2006	$ 1,046.5	$ 225.7	$ 98.3	$ 3.9	$ 45.6	$ 422.7	$ 160.4	$ 231.8	$ 70.1	$ 196.0	$ 25.3
2007	$ 1,068.2	$ 238.5	$ 101.7	$ 5.3	$ 51.9	$ 442.8	$ 164.7	$ 243.7	$ 73.6	$ 193.4	$ 25.8
2008	$ 1,128.9	$ 259.7	$ 105.4	$ (11.2)	$ 50.3	$ 479.4	$ 171.2	$ 249.1	$ 71.4	$ 207.2	$ 28.0
2009	$ 1,106.3	$ 228.0	$ 100.4	$ 3.6	$ 48.5	$ 386.9	$ 146.5	$ 221.1	$ 84.8	$ 184.4	$ 25.3
2010	$ 1,190.2	$ 249.2	$ 100.8	$ (7.9)	$ 55.3	$ 424.5	$ 159.0	$ 253.7	$ 88.0	$ 195.0	$ 28.3

Year	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$ 18.9	$ 10.5	$ 18.2	$ 18.0	$ 5.1	$ 38.1	$ 22.0	$ 48.6	$ (53.3)	$ 2.0	$ 5.2	$ 7.4
1981	$ 18.5	$ 10.2	$ 17.8	$ 18.8	$ 5.0	$ 36.4	$ 22.3	$ 45.4	$ (42.7)	$ 4.2	$ 5.3	$ 6.0
1982	$ 18.0	$ 10.9	$ 16.6	$ 19.6	$ 4.2	$ 31.2	$ 20.3	$ 42.9	$ (35.1)	$ 5.4	$ 5.2	$ 6.4
1983	$ 18.1	$ 10.5	$ 16.0	$ 20.1	$ 4.2	$ 32.6	$ 19.2	$ 37.6	$ (29.8)	$ 5.3	$ 5.4	$ 6.4
1984	$ 18.9	$ 11.1	$ 16.8	$ 21.2	$ 4.2	$ 34.7	$ 20.2	$ 39.4	$ (21.1)	$ 6.8	$ 5.4	$ 6.7
1985	$ 17.9	$ 10.5	$ 16.8	$ 19.6	$ 3.8	$ 36.1	$ 19.5	$ 41.5	$ (17.4)	$ 7.3	$ 5.3	$ 6.3
1986	$ 17.5	$ 10.3	$ 14.7	$ 17.5	$ 5.8	$ 36.0	$ 17.9	$ 42.4	$ (9.7)	$ 9.4	$ 5.3	$ 6.0
1987	$ 18.1	$ 10.5	$ 15.2	$ 18.4	$ 5.2	$ 38.7	$ 18.5	$ 43.4	$ (12.0)	$ 10.4	$ 6.1	$ 5.3
1988	$ 17.6	$ 10.9	$ 14.2	$ 18.0	$ 5.3	$ 38.7	$ 19.5	$ 37.6	$ (6.1)	$ 10.5	$ 5.8	$ 6.0
1989	$ 17.9	$ 11.6	$ 14.4	$ 18.7	$ 4.2	$ 38.9	$ 20.5	$ 35.0	$ (4.9)	$ 11.0	$ 5.9	$ 6.8
1990	$ 17.7	$ 11.3	$ 14.8	$ 16.7	$ 2.7	$ 37.0	$ 20.2	$ 26.8	$ (27.5)	$ 10.3	$ 6.0	$ 7.1
1991	$ 17.7	$ 10.9	$ 15.0	$ 16.0	$ 5.1	$ 38.3	$ 21.0	$ 35.6	$ (2.9)	$ 12.9	$ 6.6	$ 6.4
1992	$ 20.3	$ 10.0	$ 14.9	$ 18.5	$ 7.5	$ 45.7	$ 24.1	$ 40.3	$ (33.3)	$ 14.4	$ 8.1	$ 6.8
1993	$ 20.0	$ 9.8	$ 15.1	$ 20.8	$ 8.5	$ 47.0	$ 23.8	$ 45.6	$ (25.0)	$ 15.7	$ 7.6	$ 7.1
1994	$ 20.3	$ 9.8	$ 16.2	$ 20.8	$ 8.1	$ 47.2	$ 23.8	$ 40.7	$ 30.4	$ 18.2	$ 7.9	$ 6.9
1995	$ 21.1	$ 9.9	$ 16.3	$ 21.2	$ 7.3	$ 49.6	$ 24.0	$ 49.8	$ 32.9	$ 19.3	$ 8.5	$ 7.2
1996	$ 20.2	$ 10.1	$ 17.1	$ 19.7	$ 6.6	$ 50.5	$ 22.9	$ 46.2	$ 43.9	$ 19.7	$ 8.3	$ 7.2
1997	$ 20.6	$ 10.9	$ 18.4	$ 22.2	$ 7.3	$ 50.2	$ 23.9	$ 45.4	$ 39.2	$ 19.4	$ 8.4	$ 7.0
1998	$ 19.8	$ 10.8	$ 17.2	$ 19.0	$ 8.5	$ 52.0	$ 23.6	$ 41.5	$ 46.3	$ 19.4	$ 8.4	$ 6.4
1999	$ 20.8	$ 11.5	$ 17.9	$ 20.7	$ 7.2	$ 53.6	$ 24.5	$ 40.1	$ 52.9	$ 20.1	$ 7.8	$ 6.7
2000	$ 22.2	$ 14.6	$ 24.0	$ 24.1	$ 4.8	$ 54.3	$ 25.5	$ 40.0	$ 49.9	$ 19.6	$ 7.9	$ 7.2
2001	$ 21.2	$ 14.4	$ 22.6	$ 22.6	$ 4.9	$ 55.4	$ 24.3	$ 43.5	$ 64.4	$ 20.3	$ 8.0	$ 6.9
2002	$ 21.0	$ 14.1	$ 22.1	$ 22.0	$ 4.1	$ 56.1	$ 23.0	$ 44.4	$ 66.6	$ 21.3	$ 8.3	$ 6.8
2003	$ 21.4	$ 14.4	$ 21.5	$ 21.4	$ 3.5	$ 61.1	$ 23.1	$ 45.1	$ 69.0	$ 24.0	$ 8.8	$ 5.0
2004	$ 23.0	$ 15.9	$ 24.7	$ 25.1	$ 1.5	$ 66.8	$ 24.5	$ 47.6	$ 44.9	$ 24.9	$ 9.1	$ 4.1
2005	$ 24.7	$ 16.8	$ 26.9	$ 28.7	$ (1.0)	$ 71.9	$ 25.7	$ 46.5	$ 30.0	$ 25.4	$ 9.6	$ 4.5
2006	$ 26.1	$ 17.0	$ 27.2	$ 30.4	$ (0.6)	$ 76.7	$ 25.5	$ 46.2	$ 34.8	$ 26.2	$ 10.1	$ 4.8
2007	$ 26.4	$ 18.8	$ 29.7	$ 33.1	$ (0.6)	$ 78.3	$ 24.0	$ 48.3	$ 16.8	$ 28.8	$ 10.5	$ 5.7
2008	$ 27.9	$ 19.4	$ 33.0	$ 35.9	$ (2.7)	$ 87.1	$ 22.4	$ 50.6	$ (68.4)	$ 30.0	$ 11.1	$ 4.3
2009	$ 24.7	$ 16.8	$ 27.3	$ 30.5	$ 5.6	$ 87.4	$ 25.0	$ 55.8	$ 34.9	$ 31.4	$ 12.2	$ 4.1
2010	$ 25.9	$ 18.0	$ 26.8	$ 33.1	$ 6.7	$ 94.1	$ 23.9	$ 58.2	$ 49.1	$ 36.5	$ 13.5	$ 5.3

Year	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia
1980	$ 16.5	$ 5.6	$ 13.1	$ 4.3	$ (2.8)	$ 23.2	$ 10.1	$ 1.3	$ 6.7	$ 1.0
1981	$ 17.0	$ 5.7	$ 13.5	$ 4.6	$ (1.2)	$ 11.5	$ 10.4	$ 0.9	$ 4.2	$ 1.0
1982	$ 15.5	$ 5.9	$ 12.9	$ 4.8	$ 0.0	$ 8.7	$ 11.9	$ (0.2)	$ 4.2	$ 1.3
1983	$ 14.5	$ 5.9	$ 12.7	$ 5.7	$ 1.5	$ 12.7	$ 13.3	$ 0.3	$ 3.1	$ 1.3
1984	$ 15.2	$ 6.2	$ 13.5	$ 6.6	$ (0.1)	$ 12.6	$ 15.1	$ 0.9	$ 2.7	$ 1.6
1985	$ 14.5	$ 5.6	$ 12.9	$ 6.3	$ (0.2)	$ 9.4	$ 16.1	$ (0.0)	$ 2.5	$ 1.3
1986	$ 14.6	$ 5.5	$ 16.3	$ 8.2	$ 2.8	$ 7.4	$ 17.9	$ 2.0	$ 2.9	$ 2.2
1987	$ 13.9	$ 5.5	$ 15.7	$ 8.0	$ 1.7	$ 7.1	$ 19.9	$ 1.0	$ 1.8	$ 2.2
1988	$ 14.1	$ 5.7	$ 17.4	$ 9.1	$ 1.6	$ 5.9	$ 21.5	$ 1.0	$ 2.7	$ 2.6
1989	$ 14.1	$ 6.2	$ 17.2	$ 9.2	$ 0.2	$ 6.1	$ 21.6	$ 0.5	$ 2.5	$ 2.6
1990	$ 13.3	$ 5.9	$ 13.8	$ 7.9	$ (0.4)	$ 2.5	$ 22.4	$ 2.4	$ 2.6	$ 2.4
1991	$ 14.5	$ 5.2	$ 12.3	$ 10.9	$ 1.3	$ 0.3	$ 26.5	$ 2.2	$ 3.2	$ 3.1
1992	$ 16.3	$ 5.7	$ 19.2	$ 13.7	$ 3.5	$ (0.1)	$ 31.6	$ 3.2	$ 3.6	$ 4.5
1993	$ 15.7	$ 5.5	$ 26.1	$ 14.1	$ 4.6	$ (1.6)	$ 32.7	$ 4.2	$ 3.5	$ 5.3
1994	$ 15.5	$ 5.4	$ 25.8	$ 15.3	$ 3.7	$ (1.7)	$ 34.2	$ 3.9	$ 3.1	$ 5.2
1995	$ 15.6	$ 5.4	$ 28.2	$ 16.4	$ 3.1	$ (2.0)	$ 35.2	$ 3.9	$ 2.2	$ 5.7
1996	$ 15.1	$ 5.2	$ 27.7	$ 16.8	$ 2.0	$ (2.5)	$ 34.4	$ 3.3	$ 2.2	$ 5.5
1997	$ 15.1	$ 5.3	$ 24.9	$ 16.0	$ 3.5	$ (2.5)	$ 33.2	$ 3.8	$ 2.1	$ 6.4
1998	$ 15.3	$ 5.2	$ 29.6	$ 15.4	$ 6.2	$ 1.0	$ 35.3	$ 4.3	$ 2.3	$ 6.5
1999	$ 15.7	$ 5.4	$ 29.8	$ 12.1	$ 4.5	$ 1.7	$ 32.8	$ 2.6	$ 1.7	$ 5.8
2000	$ 15.7	$ 5.8	$ 26.7	$ 8.7	$ 0.7	$ (0.5)	$ 29.4	$ 2.1	$ 1.0	$ 5.3
2001	$ 16.4	$ 5.8	$ 33.6	$ 9.2	$ 2.4	$ (0.4)	$ 33.7	$ 2.4	$ 1.1	$ 5.4
2002	$ 16.8	$ 5.5	$ 33.6	$ 9.3	$ 2.9	$ (1.0)	$ 37.5	$ 1.8	$ 0.9	$ 5.8
2003	$ 18.6	$ 5.7	$ 38.2	$ 9.5	$ 2.4	$ (2.6)	$ 39.3	$ 2.5	$ 1.2	$ 6.0
2004	$ 19.9	$ 6.0	$ 37.1	$ 7.3	$ (2.8)	$ (3.4)	$ 51.5	$ 1.8	$ 0.8	$ 5.0
2005	$ 20.1	$ 5.1	$ 37.7	$ 3.7	$ (19.1)	$ (5.5)	$ 52.6	$ (0.4)	$ 0.2	$ 3.7
2006	$ 20.6	$ 4.5	$ 35.5	$ 5.0	$ (27.5)	$ (4.6)	$ 49.7	$ (2.2)	$ (0.1)	$ 3.4
2007	$ 21.4	$ 4.2	$ 39.4	$ 4.1	$ (32.1)	$ (5.8)	$ 50.5	$ (3.4)	$ (0.2)	$ 2.1
2008	$ 21.3	$ 2.7	$ 40.3	$ 0.6	$ (40.8)	$ (10.9)	$ 55.8	$ (6.1)	$ (1.9)	$ 0.7
2009	$ 21.6	$ 2.8	$ 57.1	$ 11.3	$ (24.6)	$ (8.5)	$ 63.3	$ (2.5)	$ (0.0)	$ 4.2
2010	$ 20.9	$ 2.8	$ 41.0	$ 8.7	$ (34.1)	$ (15.1)	$ 55.6	$ (6.1)	$ (1.5)	$ 2.5

Year	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World 44
1980	$ 50.8	$ 6.6	$ 5.6	$ 8.0	$ 12.7	$ 2.8	$ 18.9	$ 17.3	$ 33.0	$ 18.8	$ 0.9	$ 1,618.1
1981	$ 54.1	$ 6.6	$ 4.2	$ 5.9	$ 12.1	$ 2.5	$ 19.0	$ 17.7	$ 32.4	$ 18.2	$ 3.6	$ 1,588.0
1982	$ 51.6	$ 6.5	$ 3.7	$ 1.6	$ 11.3	$ 2.0	$ 13.5	$ 17.0	$ 30.1	$ 17.8	$ 4.4	$ 1,558.3
1983	$ 47.0	$ 6.0	$ 3.1	$ 3.6	$ 10.3	$ 1.7	$ 9.6	$ 15.4	$ 27.0	$ 17.8	$ 3.6	$ 1,562.4
1984	$ 45.6	$ 6.5	$ 3.2	$ 5.5	$ 9.9	$ 1.8	$ 10.9	$ 16.5	$ 27.9	$ 19.2	$ 4.4	$ 1,643.1
1985	$ 45.2	$ 6.6	$ 3.7	$ 5.3	$ 10.0	$ 1.5	$ 9.0	$ 16.3	$ 27.9	$ 19.5	$ 4.0	$ 1,679.2
1986	$ 44.9	$ 6.1	$ 4.2	$ 2.6	$ 9.8	$ 1.4	$ 14.3	$ 15.2	$ 24.1	$ 20.1	$ 6.6	$ 1,700.8
1987	$ 44.7	$ 6.0	$ 4.0	$ (0.3)	$ 10.7	$ 1.4	$ 12.3	$ 15.3	$ 24.9	$ 21.7	$ 5.2	$ 1,758.0
1988	$ 45.0	$ 5.6	$ 4.7	$ 1.3	$ 11.1	$ 1.4	$ 14.4	$ 15.4	$ 24.7	$ 21.8	$ 6.9	$ 1,824.5
1989	$ 43.1	$ 5.6	$ 4.6	$ 5.2	$ 12.3	$ 1.4	$ 13.4	$ 15.6	$ 26.3	$ 21.1	$ 5.5	$ 1,871.3
1990	$ 43.7	$ 5.2	$ 4.7	$ 6.3	$ 12.2	$ 1.3	$ 14.6	$ 14.3	$ 26.1	$ 21.8	$ 4.7	$ 1,877.4
1991	$ 48.1	$ 5.2	$ 5.3	$ 3.7	$ 13.0	$ 1.2	$ 16.0	$ 14.5	$ 26.3	$ 23.5	$ 7.5	$ 2,034.9
1992	$ 56.0	$ 6.1	$ 6.0	$ 6.3	$ 15.0	$ 1.6	$ 18.9	$ 15.8	$ 28.7	$ 26.9	$ 8.4	$ 2,319.5
1993	$ 56.4	$ 6.3	$ 6.4	$ 6.1	$ 14.1	$ 1.7	$ 20.0	$ 16.5	$ 28.1	$ 27.7	$ 9.5	$ 2,361.2
1994	$ 57.9	$ 6.1	$ 6.5	$ 6.7	$ 13.5	$ 1.4	$ 17.8	$ 16.4	$ 26.8	$ 26.3	$ 7.8	$ 2,399.3
1995	$ 55.3	$ 6.1	$ 6.9	$ 6.9	$ 14.2	$ 1.4	$ 17.8	$ 16.6	$ 25.9	$ 27.6	$ 7.7	$ 2,444.4
1996	$ 55.3	$ 6.1	$ 6.8	$ 7.4	$ 13.7	$ 1.4	$ 16.4	$ 17.2	$ 25.8	$ 27.7	$ 7.7	$ 2,504.4
1997	$ 56.0	$ 5.9	$ 6.6	$ 10.6	$ 14.2	$ 2.2	$ 18.9	$ 17.4	$ 26.2	$ 29.0	$ 9.7	$ 2,522.2
1998	$ 58.5	$ 6.2	$ 6.5	$ 12.5	$ 14.3	$ 2.2	$ 20.5	$ 16.0	$ 25.0	$ 29.0	$ 10.2	$ 2,523.2
1999	$ 57.7	$ 6.6	$ 6.3	$ 13.9	$ 15.1	$ 2.2	$ 16.5	$ 16.4	$ 26.0	$ 27.7	$ 7.4	$ 2,568.5
2000	$ 57.9	$ 7.1	$ 5.6	$ 16.6	$ 15.3	$ 2.7	$ 14.0	$ 17.7	$ 29.5	$ 29.6	$ 6.8	$ 2,657.2
2001	$ 57.0	$ 7.3	$ 5.7	$ 15.9	$ 15.1	$ 2.6	$ 15.3	$ 17.5	$ 28.1	$ 27.7	$ 7.0	$ 2,659.9
2002	$ 58.7	$ 7.4	$ 5.8	$ 15.6	$ 15.4	$ 2.8	$ 13.1	$ 18.6	$ 28.1	$ 27.4	$ 5.2	$ 2,704.6
2003	$ 59.7	$ 7.7	$ 6.3	$ 16.0	$ 14.9	$ 3.0	$ 15.3	$ 19.0	$ 29.2	$ 30.4	$ 4.1	$ 2,827.4
2004	$ 58.6	$ 7.7	$ 7.7	$ 16.7	$ 16.0	$ 3.4	$ 11.8	$ 19.8	$ 31.8	$ 35.1	$ 5.0	$ 2,972.3
2005	$ 54.0	$ 8.5	$ 7.3	$ 17.6	$ 16.7	$ 3.4	$ 6.2	$ 21.1	$ 35.0	$ 39.2	$ 6.5	$ 3,071.0
2006	$ 57.4	$ 8.7	$ 9.5	$ 19.9	$ 17.0	$ 4.1	$ 0.4	$ 20.0	$ 37.5	$ 40.2	$ 2.3	$ 3,151.7
2007	$ 58.4	$ 8.6	$ 10.7	$ 20.3	$ 16.9	$ 5.6	$ (2.7)	$ 18.3	$ 40.5	$ 38.1	$ 1.1	$ 3,225.5
2008	$ 55.3	$ 9.4	$ 12.3	$ 22.5	$ 17.3	$ 7.5	$ (15.4)	$ 20.3	$ 45.1	$ 38.7	$ (6.5)	$ 3,258.0
2009	$ 65.6	$ 9.2	$ 13.6	$ 23.4	$ 16.2	$ 7.8	$ (0.7)	$ 20.3	$ 39.3	$ 36.3	$ (0.5)	$ 3,246.8
2010	$ 65.9	$ 9.5	$ 14.7	$ 24.8	$ 16.1	$ 7.3	$ (13.2)	$ 21.9	$ 43.4	$ 42.2	$ (8.0)	$ 3,426.4

Table 31. GDPPC Tax 2005$ U.S. Billions, 5% SCC, 1980-2010.

	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	$ 5.8	$ 5.2	$ 3.4	$ 0.8	$ 5.7	$ 4.8	$ 4.0	$ 4.9	$ 4.8	$ 4.6	$ 5.3	$ 6.3	$ 5.2	$ 8.5	$ 5.9	$ 0.8	$ 4.8	$ 5.0	$ 0.7	$ 0.4	$ -	$ 0.5	$ 1.9
1981	$ 5.7	$ 5.1	$ 3.4	$ 0.8	$ 5.6	$ 4.7	$ 4.0	$ 4.8	$ 4.7	$ 4.5	$ 5.2	$ 6.2	$ 5.1	$ 8.3	$ 5.8	$ 0.8	$ 4.7	$ 4.9	$ 0.7	$ 0.4	$ -	$ 0.5	$ 1.9
1982	$ 5.6	$ 5.0	$ 3.3	$ 0.8	$ 5.5	$ 4.6	$ 3.9	$ 4.7	$ 4.6	$ 4.5	$ 5.1	$ 6.1	$ 5.0	$ 8.2	$ 5.7	$ 0.8	$ 4.6	$ 4.8	$ 0.7	$ 0.4	$ -	$ 0.5	$ 1.9
1983	$ 5.6	$ 5.0	$ 3.3	$ 0.8	$ 5.5	$ 4.6	$ 3.9	$ 4.7	$ 4.6	$ 4.5	$ 5.1	$ 6.1	$ 5.0	$ 8.2	$ 5.7	$ 0.8	$ 4.6	$ 4.8	$ 0.7	$ 0.4	$ -	$ 0.5	$ 1.9
1984	$ 5.9	$ 5.3	$ 3.5	$ 0.9	$ 5.8	$ 4.9	$ 4.1	$ 5.0	$ 4.9	$ 4.7	$ 5.3	$ 6.4	$ 5.3	$ 8.6	$ 6.0	$ 0.8	$ 4.8	$ 5.0	$ 0.8	$ 0.4	$ -	$ 0.5	$ 2.0
1985	$ 6.0	$ 5.4	$ 3.6	$ 0.9	$ 6.0	$ 5.0	$ 4.2	$ 5.1	$ 5.0	$ 4.8	$ 5.5	$ 6.5	$ 5.4	$ 8.8	$ 6.1	$ 0.9	$ 4.9	$ 5.2	$ 0.8	$ 0.4	$ -	$ 0.5	$ 2.0
1986	$ 6.1	$ 5.5	$ 3.6	$ 0.9	$ 6.0	$ 5.0	$ 4.3	$ 5.1	$ 5.0	$ 4.9	$ 5.5	$ 6.6	$ 5.5	$ 8.9	$ 6.2	$ 0.9	$ 5.0	$ 5.2	$ 0.8	$ 0.4	$ -	$ 0.5	$ 2.0
1987	$ 6.3	$ 5.6	$ 3.7	$ 0.9	$ 6.2	$ 5.2	$ 4.4	$ 5.3	$ 5.2	$ 5.0	$ 5.7	$ 6.8	$ 5.7	$ 9.2	$ 6.4	$ 0.9	$ 5.2	$ 5.4	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.1
1988	$ 6.5	$ 5.9	$ 3.9	$ 0.9	$ 6.5	$ 5.4	$ 4.6	$ 5.5	$ 5.4	$ 5.2	$ 5.9	$ 7.1	$ 5.9	$ 9.6	$ 6.7	$ 0.9	$ 5.4	$ 5.6	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.2
1989	$ 6.7	$ 6.0	$ 4.0	$ 1.0	$ 6.6	$ 5.5	$ 4.7	$ 5.6	$ 5.5	$ 5.4	$ 6.1	$ 7.3	$ 6.0	$ 9.8	$ 6.8	$ 1.0	$ 5.5	$ 5.7	$ 0.9	$ 0.4	$ -	$ 0.6	$ 2.2
1990	$ 6.7	$ 6.0	$ 4.0	$ 1.0	$ 6.7	$ 5.6	$ 4.7	$ 5.7	$ 5.6	$ 5.4	$ 6.1	$ 7.3	$ 6.1	$ 9.9	$ 6.8	$ 1.0	$ 5.5	$ 5.8	$ 0.9	$ 0.4	$ -	$ 0.6	$ 2.2
1991	$ 7.3	$ 6.5	$ 4.3	$ 1.1	$ 7.2	$ 6.0	$ 5.1	$ 6.1	$ 6.0	$ 5.8	$ 6.6	$ 7.9	$ 6.6	$ 10.7	$ 7.4	$ 1.0	$ 6.0	$ 6.2	$ 0.9	$ 0.5	$ -	$ 0.7	$ 2.4
1992	$ 8.3	$ 7.4	$ 4.9	$ 1.2	$ 8.2	$ 6.9	$ 5.8	$ 7.0	$ 6.9	$ 6.6	$ 7.5	$ 9.0	$ 7.5	$ 12.2	$ 8.5	$ 1.2	$ 6.8	$ 7.1	$ 1.1	$ 0.5	$ -	$ 0.7	$ 2.8
1993	$ 8.4	$ 7.6	$ 5.0	$ 1.2	$ 8.4	$ 7.0	$ 5.9	$ 7.1	$ 7.0	$ 6.8	$ 7.7	$ 9.2	$ 7.6	$ 12.4	$ 8.6	$ 1.2	$ 6.9	$ 7.2	$ 1.1	$ 0.6	$ -	$ 0.8	$ 2.8
1994	$ 8.6	$ 7.7	$ 5.1	$ 1.2	$ 8.5	$ 7.1	$ 6.0	$ 7.2	$ 7.1	$ 6.9	$ 7.8	$ 9.3	$ 7.7	$ 12.6	$ 8.8	$ 1.2	$ 7.1	$ 7.4	$ 1.1	$ 0.6	$ -	$ 0.8	$ 2.9
1995	$ 8.7	$ 7.8	$ 5.2	$ 1.3	$ 8.7	$ 7.2	$ 6.1	$ 7.4	$ 7.2	$ 7.0	$ 7.9	$ 9.5	$ 7.9	$ 12.8	$ 8.9	$ 1.2	$ 7.2	$ 7.5	$ 1.1	$ 0.6	$ -	$ 0.8	$ 2.9
1996	$ 8.9	$ 8.0	$ 5.3	$ 1.3	$ 8.9	$ 7.4	$ 6.3	$ 7.6	$ 7.4	$ 7.2	$ 8.1	$ 9.7	$ 8.1	$ 13.1	$ 9.1	$ 1.3	$ 7.4	$ 7.7	$ 1.1	$ 0.6	$ -	$ 0.8	$ 3.0
1997	$ 9.0	$ 8.1	$ 5.4	$ 1.3	$ 9.0	$ 7.5	$ 6.3	$ 7.6	$ 7.5	$ 7.2	$ 8.2	$ 9.8	$ 8.1	$ 13.2	$ 9.2	$ 1.3	$ 7.4	$ 7.7	$ 1.2	$ 0.6	$ -	$ 0.8	$ 3.0
1998	$ 9.0	$ 8.1	$ 5.4	$ 1.3	$ 9.0	$ 7.5	$ 6.3	$ 7.6	$ 7.5	$ 7.2	$ 8.2	$ 9.8	$ 8.1	$ 13.2	$ 9.2	$ 1.3	$ 7.4	$ 7.7	$ 1.2	$ 0.6	$ -	$ 0.8	$ 3.0
1999	$ 9.2	$ 8.2	$ 5.5	$ 1.3	$ 9.1	$ 7.6	$ 6.4	$ 7.8	$ 7.6	$ 7.4	$ 8.3	$ 10.0	$ 8.3	$ 13.5	$ 9.4	$ 1.3	$ 7.6	$ 7.9	$ 1.2	$ 0.6	$ -	$ 0.8	$ 3.1
2000	$ 9.5	$ 8.5	$ 5.7	$ 1.4	$ 9.4	$ 7.9	$ 6.6	$ 8.0	$ 7.9	$ 7.6	$ 8.6	$ 10.3	$ 8.6	$ 14.0	$ 9.7	$ 1.4	$ 7.8	$ 8.2	$ 1.2	$ 0.6	$ -	$ 0.9	$ 3.2
2001	$ 9.5	$ 8.5	$ 5.7	$ 1.4	$ 9.4	$ 7.9	$ 6.7	$ 8.0	$ 7.9	$ 7.6	$ 8.6	$ 10.3	$ 8.6	$ 14.0	$ 9.7	$ 1.4	$ 7.8	$ 8.2	$ 1.2	$ 0.6	$ -	$ 0.9	$ 3.2
2002	$ 9.7	$ 8.7	$ 5.8	$ 1.4	$ 9.6	$ 8.0	$ 6.8	$ 8.2	$ 8.0	$ 7.7	$ 8.8	$ 10.5	$ 8.7	$ 14.2	$ 9.9	$ 1.4	$ 8.0	$ 8.3	$ 1.2	$ 0.6	$ -	$ 0.9	$ 3.2
2003	$ 10.1	$ 9.1	$ 6.0	$ 1.5	$ 10.0	$ 8.4	$ 7.1	$ 8.5	$ 8.4	$ 8.1	$ 9.2	$ 11.0	$ 9.1	$ 14.8	$ 10.3	$ 1.4	$ 8.3	$ 8.7	$ 1.3	$ 0.7	$ -	$ 0.9	$ 3.4
2004	$ 10.6	$ 9.5	$ 6.3	$ 1.5	$ 10.6	$ 8.8	$ 7.4	$ 9.0	$ 8.8	$ 8.5	$ 9.7	$ 11.5	$ 9.6	$ 15.6	$ 10.8	$ 1.5	$ 8.7	$ 9.1	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.5
2005	$ 11.0	$ 9.9	$ 6.5	$ 1.6	$ 10.9	$ 9.1	$ 7.7	$ 9.3	$ 9.1	$ 8.8	$ 10.0	$ 11.9	$ 9.9	$ 16.1	$ 11.2	$ 1.6	$ 9.0	$ 9.4	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.7
2006	$ 11.3	$ 10.1	$ 6.7	$ 1.6	$ 11.2	$ 9.3	$ 7.9	$ 9.5	$ 9.3	$ 9.0	$ 10.2	$ 12.2	$ 10.2	$ 16.5	$ 11.5	$ 1.6	$ 9.3	$ 9.7	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.8
2007	$ 11.5	$ 10.3	$ 6.9	$ 1.7	$ 11.5	$ 9.6	$ 8.1	$ 9.7	$ 9.6	$ 9.2	$ 10.5	$ 12.5	$ 10.4	$ 16.9	$ 11.8	$ 1.6	$ 9.5	$ 9.9	$ 1.5	$ 0.8	$ -	$ 1.0	$ 3.8
2008	$ 11.6	$ 10.5	$ 6.9	$ 1.7	$ 11.6	$ 9.7	$ 8.2	$ 9.8	$ 9.7	$ 9.3	$ 10.6	$ 12.7	$ 10.5	$ 17.1	$ 11.9	$ 1.7	$ 9.6	$ 10.0	$ 1.5	$ 0.8	$ -	$ 1.0	$ 3.9
2009	$ 11.6	$ 10.4	$ 6.9	$ 1.7	$ 11.5	$ 9.6	$ 8.1	$ 9.8	$ 9.6	$ 9.3	$ 10.5	$ 12.6	$ 10.5	$ 17.0	$ 11.8	$ 1.7	$ 9.5	$ 10.0	$ 1.5	$ 0.8	$ -	$ 1.0	$ 3.9
2010	$ 12.2	$ 11.0	$ 7.3	$ 1.8	$ 12.2	$ 10.2	$ 8.6	$ 10.3	$ 10.2	$ 9.8	$ 11.1	$ 13.3	$ 11.1	$ 18.0	$ 12.5	$ 1.8	$ 10.1	$ 10.5	$ 1.6	$ 0.8	$ -	$ 1.1	$ 4.1

	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World-44
1980	$ 2.9	$ 1.5	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 2.9	$ 3.8	$ 1.2	$ 0.8	$ 1.1	$ 3.6	$ 0.1	$ 1.3	$ 2.5	$ 7.7	$ 2.1	$ 0.7	$ 7.6	$ 1.0	$ 0.8	$ 132.2
1981	$ 2.8	$ 1.4	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 2.9	$ 3.7	$ 1.2	$ 0.8	$ 1.0	$ 3.6	$ 0.1	$ 1.3	$ 2.5	$ 7.5	$ 2.1	$ 0.7	$ 7.5	$ 1.0	$ 0.8	$ 129.8
1982	$ 2.8	$ 1.4	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 2.8	$ 3.6	$ 1.2	$ 0.8	$ 1.0	$ 3.5	$ 0.1	$ 1.3	$ 2.4	$ 7.4	$ 2.0	$ 0.7	$ 7.4	$ 1.0	$ 0.8	$ 127.3
1983	$ 2.8	$ 1.4	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 2.8	$ 3.6	$ 1.2	$ 0.8	$ 1.0	$ 3.5	$ 0.1	$ 1.3	$ 2.4	$ 7.4	$ 2.0	$ 0.7	$ 7.4	$ 1.0	$ 0.8	$ 127.7
1984	$ 2.9	$ 1.5	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 3.0	$ 3.8	$ 1.2	$ 0.8	$ 1.1	$ 3.7	$ 0.1	$ 1.3	$ 2.6	$ 7.8	$ 2.1	$ 0.8	$ 7.8	$ 1.0	$ 0.8	$ 134.3
1985	$ 3.0	$ 1.5	$ 0.1	$ 0.2	$ 0.4	$ 0.3	$ 3.0	$ 3.9	$ 1.2	$ 0.9	$ 1.1	$ 3.8	$ 0.1	$ 1.4	$ 2.6	$ 8.0	$ 2.2	$ 0.8	$ 7.9	$ 1.1	$ 0.8	$ 137.2
1986	$ 3.0	$ 1.5	$ 0.1	$ 0.2	$ 0.5	$ 0.3	$ 3.1	$ 4.0	$ 1.3	$ 0.9	$ 1.1	$ 3.8	$ 0.1	$ 1.4	$ 2.7	$ 8.1	$ 2.2	$ 0.8	$ 8.0	$ 1.1	$ 0.8	$ 139.0
1987	$ 3.1	$ 1.6	$ 0.1	$ 0.2	$ 0.5	$ 0.3	$ 3.2	$ 4.1	$ 1.3	$ 0.9	$ 1.2	$ 4.0	$ 0.1	$ 1.4	$ 2.7	$ 8.3	$ 2.3	$ 0.8	$ 8.3	$ 1.1	$ 0.9	$ 143.6
1988	$ 3.2	$ 1.6	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.3	$ 4.2	$ 1.3	$ 0.9	$ 1.2	$ 4.1	$ 0.1	$ 1.5	$ 2.9	$ 8.6	$ 2.4	$ 0.8	$ 8.6	$ 1.2	$ 0.9	$ 149.1
1989	$ 3.3	$ 1.7	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.4	$ 4.4	$ 1.4	$ 1.0	$ 1.2	$ 4.2	$ 0.2	$ 1.5	$ 2.9	$ 8.9	$ 2.4	$ 0.9	$ 8.8	$ 1.2	$ 0.9	$ 152.9
1990	$ 3.3	$ 1.7	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.4	$ 4.4	$ 1.4	$ 1.0	$ 1.2	$ 4.2	$ 0.2	$ 1.5	$ 2.9	$ 8.9	$ 2.4	$ 0.9	$ 8.9	$ 1.2	$ 0.9	$ 153.4
1991	$ 3.6	$ 1.8	$ 0.2	$ 0.3	$ 0.5	$ 0.4	$ 3.7	$ 4.7	$ 1.5	$ 1.0	$ 1.3	$ 4.6	$ 0.2	$ 1.7	$ 3.2	$ 9.6	$ 2.6	$ 0.9	$ 9.6	$ 1.3	$ 1.0	$ 166.3
1992	$ 4.1	$ 2.1	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 4.2	$ 5.4	$ 1.7	$ 1.2	$ 1.5	$ 5.2	$ 0.2	$ 1.9	$ 3.6	$ 11.0	$ 3.0	$ 1.1	$ 11.0	$ 1.5	$ 1.1	$ 189.5
1993	$ 4.2	$ 2.1	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 4.3	$ 5.5	$ 1.7	$ 1.2	$ 1.6	$ 5.3	$ 0.2	$ 1.9	$ 3.7	$ 11.2	$ 3.1	$ 1.1	$ 11.2	$ 1.5	$ 1.2	$ 192.9
1994	$ 4.3	$ 2.2	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 4.3	$ 5.6	$ 1.8	$ 1.2	$ 1.6	$ 5.4	$ 0.2	$ 2.0	$ 3.8	$ 11.4	$ 3.1	$ 1.1	$ 11.3	$ 1.5	$ 1.2	$ 196.1
1995	$ 4.3	$ 2.2	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 4.4	$ 5.7	$ 1.8	$ 1.3	$ 1.6	$ 5.5	$ 0.2	$ 2.0	$ 3.8	$ 11.6	$ 3.2	$ 1.1	$ 11.6	$ 1.6	$ 1.2	$ 199.7
1996	$ 4.5	$ 2.3	$ 0.2	$ 0.3	$ 0.7	$ 0.4	$ 4.5	$ 5.8	$ 1.9	$ 1.3	$ 1.6	$ 5.6	$ 0.2	$ 2.0	$ 3.9	$ 11.9	$ 3.3	$ 1.2	$ 11.8	$ 1.6	$ 1.2	$ 204.6
1997	$ 4.5	$ 2.3	$ 0.2	$ 0.3	$ 0.7	$ 0.4	$ 4.6	$ 5.9	$ 1.9	$ 1.3	$ 1.7	$ 5.7	$ 0.2	$ 2.1	$ 3.9	$ 11.9	$ 3.3	$ 1.2	$ 11.9	$ 1.6	$ 1.2	$ 206.1
1998	$ 4.5	$ 2.3	$ 0.2	$ 0.3	$ 0.7	$ 0.4	$ 4.6	$ 5.9	$ 1.9	$ 1.3	$ 1.7	$ 5.7	$ 0.2	$ 2.1	$ 3.9	$ 11.9	$ 3.3	$ 1.2	$ 11.9	$ 1.6	$ 1.2	$ 206.2
1999	$ 4.6	$ 2.3	$ 0.2	$ 0.3	$ 0.7	$ 0.4	$ 4.6	$ 6.0	$ 1.9	$ 1.3	$ 1.7	$ 5.8	$ 0.2	$ 2.1	$ 4.0	$ 12.2	$ 3.3	$ 1.2	$ 12.1	$ 1.6	$ 1.3	$ 209.9
2000	$ 4.7	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.8	$ 6.2	$ 2.0	$ 1.4	$ 1.7	$ 6.0	$ 0.2	$ 2.2	$ 4.2	$ 12.6	$ 3.5	$ 1.2	$ 12.6	$ 1.7	$ 1.3	$ 217.1
2001	$ 4.7	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.8	$ 6.2	$ 2.0	$ 1.4	$ 1.7	$ 6.0	$ 0.2	$ 2.2	$ 4.2	$ 12.6	$ 3.5	$ 1.2	$ 12.6	$ 1.7	$ 1.3	$ 217.3
2002	$ 4.8	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.9	$ 6.3	$ 2.0	$ 1.4	$ 1.8	$ 6.1	$ 0.2	$ 2.2	$ 4.2	$ 12.8	$ 3.5	$ 1.3	$ 12.8	$ 1.7	$ 1.3	$ 221.0
2003	$ 5.0	$ 2.6	$ 0.2	$ 0.4	$ 0.7	$ 0.5	$ 5.1	$ 6.6	$ 2.1	$ 1.5	$ 1.9	$ 6.4	$ 0.2	$ 2.3	$ 4.4	$ 13.4	$ 3.7	$ 1.3	$ 13.4	$ 1.8	$ 1.4	$ 231.0
2004	$ 5.3	$ 2.7	$ 0.2	$ 0.4	$ 0.8	$ 0.5	$ 5.4	$ 6.9	$ 2.2	$ 1.5	$ 2.0	$ 6.7	$ 0.2	$ 2.4	$ 4.6	$ 14.1	$ 3.9	$ 1.4	$ 14.0	$ 1.9	$ 1.5	$ 242.9
2005	$ 5.5	$ 2.8	$ 0.3	$ 0.4	$ 0.8	$ 0.5	$ 5.6	$ 7.1	$ 2.3	$ 1.6	$ 2.0	$ 6.9	$ 0.2	$ 2.5	$ 4.8	$ 14.5	$ 4.0	$ 1.4	$ 14.5	$ 2.0	$ 1.5	$ 250.9
2006	$ 5.6	$ 2.8	$ 0.3	$ 0.4	$ 0.8	$ 0.5	$ 5.7	$ 7.3	$ 2.3	$ 1.6	$ 2.1	$ 7.1	$ 0.3	$ 2.6	$ 4.9	$ 14.9	$ 4.1	$ 1.5	$ 14.9	$ 2.0	$ 1.5	$ 257.5
2007	$ 5.7	$ 2.9	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 5.8	$ 7.5	$ 2.4	$ 1.7	$ 2.1	$ 7.3	$ 0.3	$ 2.6	$ 5.0	$ 15.3	$ 4.2	$ 1.5	$ 15.2	$ 2.1	$ 1.6	$ 263.6
2008	$ 5.8	$ 2.9	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 5.9	$ 7.6	$ 2.4	$ 1.7	$ 2.1	$ 7.3	$ 0.3	$ 2.7	$ 5.1	$ 15.4	$ 4.2	$ 1.5	$ 15.4	$ 2.1	$ 1.6	$ 266.2
2009	$ 5.8	$ 2.9	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 5.9	$ 7.6	$ 2.4	$ 1.7	$ 2.1	$ 7.3	$ 0.3	$ 2.6	$ 5.1	$ 15.4	$ 4.2	$ 1.5	$ 15.3	$ 2.1	$ 1.6	$ 265.3
2010	$ 6.1	$ 3.1	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 6.2	$ 8.0	$ 2.5	$ 1.8	$ 2.3	$ 7.7	$ 0.3	$ 2.8	$ 5.4	$ 16.2	$ 4.5	$ 1.6	$ 16.2	$ 2.2	$ 1.7	$ 280.0

Table 32. GDPPC Tax $fGDP_{e+CO2}$, 5% SCC, 1980-2010.

	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep
1980	9%	6%	5%	26%	10%	6%	5%	10%	10%	6%	8%	8%	11%	10%	9%	13%	8%	9%	7%	30%	10%	9%	11%
1981	8%	5%	5%	20%	9%	5%	4%	9%	9%	5%	8%	7%	10%	10%	8%	11%	6%	8%	7%	25%	9%	7%	10%
1982	7%	5%	4%	20%	8%	5%	4%	9%	9%	5%	7%	7%	9%	9%	7%	11%	6%	8%	6%	21%	8%	7%	9%
1983	6%	4%	4%	20%	7%	4%	4%	8%	8%	4%	7%	7%	9%	9%	8%	11%	5%	7%	6%	18%	7%	7%	9%
1984	5%	4%	3%	14%	6%	4%	3%	9%	6%	4%	7%	6%	8%	9%	7%	8%	4%	7%	5%	14%	4%	6%	8%
1985	5%	4%	4%	15%	6%	4%	3%	10%	7%	4%	7%	6%	8%	9%	7%	9%	4%	7%	5%	15%	4%	6%	9%
1986	4%	4%	4%	14%	5%	4%	3%	9%	6%	4%	7%	6%	8%	9%	7%	8%	4%	6%	6%	13%	4%	6%	8%
1987	4%	3%	3%	15%	5%	3%	3%	8%	7%	4%	6%	6%	8%	9%	7%	8%	4%	6%	6%	13%	5%	6%	7%
1988	4%	4%	4%	13%	6%	4%	3%	8%	7%	4%	7%	6%	8%	9%	8%	10%	5%	7%	7%	17%	6%	6%	7%
1989	4%	4%	4%	13%	5%	3%	3%	6%	7%	4%	7%	6%	8%	9%	8%	8%	5%	6%	6%	12%	5%	6%	7%
1990	4%	4%	4%	13%	6%	3%	3%	6%	7%	4%	6%	6%	9%	10%	8%	8%	4%	6%	6%	18%	5%	5%	7%
1991	4%	3%	3%	9%	6%	4%	3%	6%	6%	4%	6%	6%	9%	10%	7%	7%	4%	6%	5%	16%	5%	6%	7%
1992	3%	3%	3%	9%	6%	4%	3%	5%	6%	4%	7%	6%	10%	10%	7%	7%	4%	6%	6%	8%	4%	5%	7%
1993	3%	3%	3%	13%	6%	4%	3%	5%	6%	4%	7%	7%	11%	11%	7%	8%	4%	6%	5%	8%	4%	5%	8%
1994	4%	3%	4%	9%	6%	4%	3%	4%	6%	4%	7%	7%	10%	10%	8%	8%	4%	7%	5%	8%	4%	5%	8%
1995	3%	3%	3%	7%	5%	4%	3%	4%	6%	4%	7%	6%	10%	9%	7%	8%	4%	6%	5%	8%	4%	5%	7%
1996	3%	3%	3%	6%	4%	3%	2%	3%	5%	3%	6%	6%	9%	9%	7%	6%	3%	6%	5%	7%	3%	4%	7%
1997	3%	3%	3%	7%	4%	4%	3%	3%	5%	3%	6%	6%	9%	9%	7%	7%	3%	6%	5%	6%	3%	4%	7%
1998	4%	3%	3%	7%	5%	4%	3%	3%	5%	3%	6%	6%	8%	7%	7%	9%	4%	6%	6%	8%	5%	5%	7%
1999	3%	2%	3%	7%	5%	4%	2%	3%	5%	3%	6%	6%	7%	8%	7%	8%	3%	6%	5%	6%	4%	5%	7%
2000	3%	2%	3%	6%	5%	3%	2%	3%	5%	3%	6%	6%	8%	8%	7%	8%	4%	6%	5%	6%	4%	5%	7%
2001	4%	2%	3%	6%	6%	3%	3%	4%	6%	4%	6%	7%	8%	9%	8%	10%	4%	7%	6%	7%	4%	5%	10%
2002	4%	3%	4%	9%	6%	4%	4%	4%	7%	4%	7%	7%	8%	9%	8%	12%	4%	8%	6%	10%	5%	6%	11%
2003	5%	3%	5%	12%	7%	4%	4%	5%	8%	4%	8%	8%	9%	9%	8%	14%	5%	8%	8%	12%	6%	7%	12%
2004	5%	4%	5%	13%	8%	4%	5%	5%	8%	5%	8%	8%	10%	10%	8%	14%	5%	9%	8%	12%	6%	7%	13%
2005	5%	4%	6%	13%	7%	4%	5%	5%	8%	5%	9%	8%	10%	9%	8%	14%	5%	10%	9%	13%	6%	8%	12%
2006	7%	5%	7%	17%	10%	5%	6%	7%	10%	6%	10%	9%	11%	10%	9%	17%	6%	12%	10%	17%	8%	9%	15%
2007	4%	4%	5%	13%	8%	5%	5%	6%	7%	5%	8%	8%	9%	10%	8%	11%	4%	9%	8%	12%	5%	7%	13%
2008	5%	4%	6%	15%	8%	5%	6%	6%	8%	6%	9%	9%	10%	11%	9%	12%	4%	11%	9%	13%	6%	7%	13%
2009	0%	0%	1%	0%	2%	0%	0%	0%	1%	0%	3%	5%	5%	5%	3%	1%	1%	3%	0%	0%	0%	1%	3%
2010	0%	0%	1%	0%	2%	0%	0%	0%	1%	0%	3%	5%	5%	6%	3%	1%	1%	3%	0%	0%	0%	1%	3%

	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World-44
1980	7%	10%	10%	11%	16%	5%	11%	26%	8%	15%	5%	12%	8%	15%	7%	46%	10%	5%	7%	6%	12%	11%
1981	6%	9%	9%	9%	13%	4%	9%	25%	10%	13%	5%	11%	8%	13%	7%	47%	10%	5%	7%	5%	11%	10%
1982	5%	8%	9%	8%	15%	4%	8%	24%	10%	12%	5%	10%	7%	12%	7%	50%	9%	4%	6%	5%	10%	9%
1983	5%	9%	9%	8%	14%	4%	8%	25%	10%	12%	5%	9%	6%	11%	6%	53%	9%	4%	6%	4%	10%	8%
1984	4%	7%	6%	5%	9%	3%	6%	17%	7%	8%	3%	8%	4%	11%	5%	48%	5%	3%	6%	3%	6%	7%
1985	5%	8%	7%	6%	11%	4%	6%	22%	9%	9%	3%	9%	4%	13%	6%	56%	6%	3%	6%	4%	8%	7%
1986	4%	7%	6%	5%	10%	4%	6%	20%	7%	8%	3%	9%	3%	12%	5%	55%	5%	3%	6%	3%	6%	6%
1987	5%	7%	6%	5%	12%	4%	6%	21%	9%	9%	4%	9%	4%	10%	5%	56%	6%	3%	6%	4%	7%	6%
1988	5%	7%	8%	7%	13%	8%	7%	18%	9%	9%	4%	10%	5%	9%	5%	56%	6%	4%	6%	4%	8%	5%
1989	5%	7%	8%	5%	11%	11%	6%	12%	8%	8%	4%	10%	4%	10%	5%	54%	6%	4%	6%	4%	6%	5%
1990	5%	7%	7%	5%	10%	13%	6%	15%	7%	8%	3%	10%	4%	10%	4%	63%	6%	4%	6%	4%	7%	6%
1991	5%	7%	6%	5%	9%	21%	6%	25%	7%	7%	3%	10%	3%	10%	4%	68%	5%	3%	6%	4%	5%	5%
1992	5%	7%	6%	4%	9%	21%	6%	20%	8%	7%	3%	11%	3%	9%	5%	73%	5%	3%	7%	3%	6%	5%
1993	5%	8%	6%	5%	10%	23%	6%	17%	10%	7%	3%	11%	3%	9%	5%	75%	5%	3%	7%	4%	7%	5%
1994	6%	8%	6%	5%	11%	26%	7%	17%	10%	8%	3%	11%	3%	9%	6%	76%	6%	3%	7%	4%	7%	4%
1995	5%	7%	6%	5%	9%	23%	6%	15%	10%	6%	3%	11%	3%	7%	5%	72%	5%	3%	7%	4%	5%	5%
1996	5%	7%	5%	3%	6%	10%	5%	14%	9%	5%	2%	10%	2%	6%	4%	69%	4%	3%	7%	3%	4%	5%
1997	5%	7%	5%	5%	8%	8%	6%	17%	11%	6%	3%	10%	3%	6%	4%	55%	5%	3%	6%	3%	5%	4%
1998	6%	7%	7%	7%	11%	13%	7%	18%	14%	8%	4%	10%	5%	6%	5%	50%	7%	3%	6%	4%	7%	4%
1999	5%	7%	5%	7%	9%	12%	6%	18%	13%	7%	3%	9%	4%	5%	5%	48%	6%	3%	6%	3%	6%	4%
2000	5%	7%	5%	7%	9%	14%	6%	19%	13%	7%	3%	10%	4%	5%	5%	45%	7%	3%	6%	4%	7%	4%
2001	5%	8%	6%	8%	10%	24%	7%	19%	14%	7%	4%	10%	5%	6%	5%	44%	7%	3%	6%	4%	8%	4%
2002	6%	9%	7%	9%	14%	24%	6%	21%	16%	9%	5%	11%	5%	7%	6%	43%	9%	4%	7%	4%	9%	4%
2003	7%	11%	8%	12%	23%	33%	7%	23%	18%	11%	7%	11%	6%	8%	6%	45%	12%	5%	7%	5%	10%	4%
2004	7%	12%	9%	12%	27%	29%	8%	25%	19%	12%	7%	12%	5%	8%	7%	40%	14%	6%	7%	6%	13%	5%
2005	7%	12%	9%	12%	28%	32%	9%	26%	19%	13%	7%	12%	5%	8%	7%	38%	15%	7%	7%	7%	14%	6%
2006	9%	15%	11%	15%	34%	46%	10%	30%	24%	16%	9%	13%	6%	10%	9%	35%	21%	9%	8%	8%	20%	7%
2007	7%	13%	8%	10%	24%	37%	7%	24%	18%	12%	6%	12%	4%	8%	7%	28%	15%	6%	7%	7%	14%	7%
2008	8%	14%	11%	12%	29%	55%	9%	29%	22%	14%	7%	13%	5%	8%	8%	26%	19%	7%	7%	7%	20%	9%
2009	2%	3%	0%	0%	0%	1%	1%	9%	5%	1%	0%	6%	0%	1%	3%	17%	1%	1%	4%	0%	1%	7%
2010	3%	3%	0%	0%	0%	2%	1%	9%	5%	1%	0%	6%	0%	1%	3%	16%	1%	1%	4%	0%	1%	7%

Table 33. GDPPC Tax 2005$ U.S. Billions, 3% SCC, 1980-2010.

	United St	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland
1980	$ 19.4	$ 17.5	$ 11.6	$ 2.8	$ 19.3	$ 16.1	$ 13.6	$ 16.4	$ 16.1	$ 15.6	$ 17.7	$ 21.1	$ 17.6
1981	$ 19.1	$ 17.1	$ 11.4	$ 2.8	$ 19.0	$ 15.8	$ 13.4	$ 16.1	$ 15.8	$ 15.3	$ 17.4	$ 20.8	$ 17.2
1982	$ 18.7	$ 16.8	$ 11.2	$ 2.7	$ 18.6	$ 15.5	$ 13.1	$ 15.8	$ 15.5	$ 15.0	$ 17.0	$ 20.4	$ 16.9
1983	$ 18.8	$ 16.9	$ 11.2	$ 2.7	$ 18.7	$ 15.6	$ 13.2	$ 15.9	$ 15.6	$ 15.0	$ 17.1	$ 20.4	$ 17.0
1984	$ 19.8	$ 17.7	$ 11.8	$ 2.9	$ 19.6	$ 16.4	$ 13.8	$ 16.7	$ 16.4	$ 15.8	$ 18.0	$ 21.5	$ 17.8
1985	$ 20.2	$ 18.1	$ 12.0	$ 2.9	$ 20.1	$ 16.7	$ 14.1	$ 17.1	$ 16.7	$ 16.2	$ 18.4	$ 21.9	$ 18.2
1986	$ 20.4	$ 18.4	$ 12.2	$ 3.0	$ 20.3	$ 17.0	$ 14.3	$ 17.3	$ 17.0	$ 16.4	$ 18.6	$ 22.2	$ 18.5
1987	$ 21.1	$ 19.0	$ 12.6	$ 3.1	$ 21.0	$ 17.5	$ 14.8	$ 17.9	$ 17.5	$ 16.9	$ 19.2	$ 23.0	$ 19.1
1988	$ 21.9	$ 19.7	$ 13.1	$ 3.2	$ 21.8	$ 18.2	$ 15.4	$ 18.5	$ 18.2	$ 17.6	$ 19.9	$ 23.8	$ 19.8
1989	$ 22.5	$ 20.2	$ 13.4	$ 3.3	$ 22.3	$ 18.7	$ 15.8	$ 19.0	$ 18.7	$ 18.0	$ 20.5	$ 24.5	$ 20.3
1990	$ 22.6	$ 20.3	$ 13.4	$ 3.3	$ 22.4	$ 18.7	$ 15.8	$ 19.1	$ 18.7	$ 18.1	$ 20.5	$ 24.5	$ 20.4
1991	$ 24.5	$ 22.0	$ 14.6	$ 3.6	$ 24.3	$ 20.3	$ 17.1	$ 20.7	$ 20.3	$ 19.6	$ 22.2	$ 26.6	$ 22.1
1992	$ 27.9	$ 25.0	$ 16.6	$ 4.0	$ 27.7	$ 23.1	$ 19.5	$ 23.6	$ 23.1	$ 22.3	$ 25.4	$ 30.3	$ 25.2
1993	$ 28.4	$ 25.5	$ 16.9	$ 4.1	$ 28.2	$ 23.5	$ 19.9	$ 24.0	$ 23.5	$ 22.7	$ 25.8	$ 30.9	$ 25.6
1994	$ 28.8	$ 25.9	$ 17.2	$ 4.2	$ 28.7	$ 23.9	$ 20.2	$ 24.4	$ 23.9	$ 23.1	$ 26.2	$ 31.4	$ 26.0
1995	$ 29.4	$ 26.4	$ 17.5	$ 4.3	$ 29.2	$ 24.4	$ 20.6	$ 24.8	$ 24.4	$ 23.5	$ 26.7	$ 31.9	$ 26.5
1996	$ 30.1	$ 27.0	$ 17.9	$ 4.4	$ 29.9	$ 25.0	$ 21.1	$ 25.4	$ 25.0	$ 24.1	$ 27.4	$ 32.7	$ 27.2
1997	$ 30.3	$ 27.2	$ 18.1	$ 4.4	$ 30.1	$ 25.2	$ 21.2	$ 25.6	$ 25.1	$ 24.3	$ 27.6	$ 33.0	$ 27.4
1998	$ 30.3	$ 27.2	$ 18.1	$ 4.4	$ 30.1	$ 25.2	$ 21.2	$ 25.6	$ 25.2	$ 24.3	$ 27.6	$ 33.0	$ 27.4
1999	$ 30.9	$ 27.7	$ 18.4	$ 4.5	$ 30.7	$ 25.6	$ 21.6	$ 26.1	$ 25.6	$ 24.7	$ 28.1	$ 33.6	$ 27.9
2000	$ 31.9	$ 28.7	$ 19.0	$ 4.6	$ 31.7	$ 26.5	$ 22.4	$ 27.0	$ 26.5	$ 25.6	$ 29.0	$ 34.7	$ 28.8
2001	$ 32.0	$ 28.7	$ 19.0	$ 4.6	$ 31.8	$ 26.5	$ 22.4	$ 27.0	$ 26.5	$ 25.6	$ 29.1	$ 34.8	$ 28.9
2002	$ 32.5	$ 29.2	$ 19.4	$ 4.7	$ 32.3	$ 27.0	$ 22.8	$ 27.5	$ 27.0	$ 26.0	$ 29.6	$ 35.3	$ 29.4
2003	$ 34.0	$ 30.5	$ 20.2	$ 4.9	$ 33.8	$ 28.2	$ 23.8	$ 28.7	$ 28.2	$ 27.2	$ 30.9	$ 36.9	$ 30.7
2004	$ 35.7	$ 32.1	$ 21.3	$ 5.2	$ 35.5	$ 29.6	$ 25.0	$ 30.2	$ 29.6	$ 28.6	$ 32.5	$ 38.8	$ 32.3
2005	$ 36.9	$ 33.1	$ 22.0	$ 5.4	$ 36.7	$ 30.6	$ 25.9	$ 31.2	$ 30.6	$ 29.6	$ 33.6	$ 40.1	$ 33.3
2006	$ 37.9	$ 34.0	$ 22.6	$ 5.5	$ 37.6	$ 31.4	$ 26.5	$ 32.0	$ 31.4	$ 30.3	$ 34.4	$ 41.2	$ 34.2
2007	$ 38.8	$ 34.8	$ 23.1	$ 5.6	$ 38.5	$ 32.2	$ 27.2	$ 32.8	$ 32.2	$ 31.1	$ 35.3	$ 42.1	$ 35.0
2008	$ 39.2	$ 35.2	$ 23.3	$ 5.7	$ 38.9	$ 32.5	$ 27.4	$ 33.1	$ 32.5	$ 31.4	$ 35.6	$ 42.6	$ 35.4
2009	$ 39.0	$ 35.0	$ 23.3	$ 5.7	$ 38.8	$ 32.4	$ 27.3	$ 33.0	$ 32.4	$ 31.3	$ 35.5	$ 42.4	$ 35.2
2010	$ 41.2	$ 37.0	$ 24.5	$ 6.0	$ 40.9	$ 34.2	$ 28.8	$ 34.8	$ 34.2	$ 33.0	$ 37.4	$ 44.8	$ 37.2

	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran
1980	$ 28.6	$ 19.9	$ 2.8	$ 16.0	$ 16.7	$ 2.5	$ 1.3	$ -	$ 1.7	$ 6.5	$ 9.7	$ 4.9	$ 0.5	$ 0.7	$ 1.4
1981	$ 28.0	$ 19.5	$ 2.7	$ 15.7	$ 16.4	$ 2.4	$ 1.2	$ -	$ 1.7	$ 6.4	$ 9.5	$ 4.8	$ 0.4	$ 0.7	$ 1.4
1982	$ 27.5	$ 19.1	$ 2.7	$ 15.4	$ 16.1	$ 2.4	$ 1.2	$ -	$ 1.7	$ 6.2	$ 9.3	$ 4.7	$ 0.4	$ 0.7	$ 1.4
1983	$ 27.6	$ 19.2	$ 2.7	$ 15.5	$ 16.1	$ 2.4	$ 1.2	$ -	$ 1.7	$ 6.3	$ 9.4	$ 4.7	$ 0.4	$ 0.7	$ 1.4
1984	$ 29.0	$ 20.2	$ 2.8	$ 16.3	$ 17.0	$ 2.5	$ 1.3	$ -	$ 1.8	$ 6.6	$ 9.8	$ 5.0	$ 0.5	$ 0.7	$ 1.5
1985	$ 29.7	$ 20.6	$ 2.9	$ 16.6	$ 17.3	$ 2.6	$ 1.3	$ -	$ 1.8	$ 6.7	$ 10.1	$ 5.1	$ 0.5	$ 0.7	$ 1.5
1986	$ 30.0	$ 20.9	$ 2.9	$ 16.8	$ 17.6	$ 2.6	$ 1.3	$ -	$ 1.8	$ 6.8	$ 10.2	$ 5.2	$ 0.5	$ 0.7	$ 1.5
1987	$ 31.0	$ 21.6	$ 3.0	$ 17.4	$ 18.1	$ 2.7	$ 1.4	$ -	$ 1.9	$ 7.0	$ 10.5	$ 5.3	$ 0.5	$ 0.8	$ 1.6
1988	$ 32.2	$ 22.4	$ 3.1	$ 18.0	$ 18.8	$ 2.8	$ 1.4	$ -	$ 2.0	$ 7.3	$ 10.9	$ 5.5	$ 0.5	$ 0.8	$ 1.6
1989	$ 33.0	$ 23.0	$ 3.2	$ 18.5	$ 19.3	$ 2.9	$ 1.5	$ -	$ 2.0	$ 7.5	$ 11.2	$ 5.7	$ 0.5	$ 0.8	$ 1.7
1990	$ 33.2	$ 23.0	$ 3.2	$ 18.6	$ 19.4	$ 2.9	$ 1.5	$ -	$ 2.0	$ 7.5	$ 11.2	$ 5.7	$ 0.5	$ 0.8	$ 1.7
1991	$ 35.9	$ 25.0	$ 3.5	$ 20.1	$ 21.0	$ 3.1	$ 1.6	$ -	$ 2.2	$ 8.1	$ 12.2	$ 6.2	$ 0.6	$ 0.9	$ 1.8
1992	$ 41.0	$ 28.5	$ 4.0	$ 22.9	$ 23.9	$ 3.6	$ 1.8	$ -	$ 2.5	$ 9.3	$ 13.9	$ 7.0	$ 0.7	$ 1.0	$ 2.1
1993	$ 41.7	$ 29.0	$ 4.1	$ 23.4	$ 24.4	$ 3.6	$ 1.9	$ -	$ 2.5	$ 9.5	$ 14.1	$ 7.2	$ 0.7	$ 1.0	$ 2.1
1994	$ 42.4	$ 29.4	$ 4.1	$ 23.7	$ 24.8	$ 3.7	$ 1.9	$ -	$ 2.6	$ 9.6	$ 14.4	$ 7.3	$ 0.7	$ 1.0	$ 2.1
1995	$ 43.2	$ 30.0	$ 4.2	$ 24.2	$ 25.2	$ 3.8	$ 1.9	$ -	$ 2.6	$ 9.8	$ 14.6	$ 7.4	$ 0.7	$ 1.0	$ 2.2
1996	$ 44.2	$ 30.7	$ 4.3	$ 24.8	$ 25.8	$ 3.8	$ 2.0	$ -	$ 2.7	$ 10.0	$ 15.0	$ 7.6	$ 0.7	$ 1.1	$ 2.2
1997	$ 44.5	$ 30.9	$ 4.3	$ 24.9	$ 26.0	$ 3.9	$ 2.0	$ -	$ 2.7	$ 10.1	$ 15.1	$ 7.7	$ 0.7	$ 1.1	$ 2.2
1998	$ 44.6	$ 31.0	$ 4.3	$ 25.0	$ 26.0	$ 3.9	$ 2.0	$ -	$ 2.7	$ 10.1	$ 15.1	$ 7.7	$ 0.7	$ 1.1	$ 2.2
1999	$ 45.4	$ 31.5	$ 4.4	$ 25.4	$ 26.5	$ 3.9	$ 2.0	$ -	$ 2.8	$ 10.3	$ 15.4	$ 7.8	$ 0.7	$ 1.1	$ 2.3
2000	$ 46.9	$ 32.6	$ 4.6	$ 26.3	$ 27.4	$ 4.1	$ 2.1	$ -	$ 2.9	$ 10.6	$ 15.9	$ 8.1	$ 0.7	$ 1.1	$ 2.4
2001	$ 47.0	$ 32.6	$ 4.6	$ 26.3	$ 27.5	$ 4.1	$ 2.1	$ -	$ 2.9	$ 10.6	$ 15.9	$ 8.1	$ 0.8	$ 1.1	$ 2.4
2002	$ 47.8	$ 33.2	$ 4.6	$ 26.8	$ 27.9	$ 4.2	$ 2.1	$ -	$ 2.9	$ 10.8	$ 16.2	$ 8.2	$ 0.8	$ 1.2	$ 2.4
2003	$ 49.9	$ 34.7	$ 4.9	$ 28.0	$ 29.2	$ 4.3	$ 2.2	$ -	$ 3.0	$ 11.3	$ 16.9	$ 8.6	$ 0.8	$ 1.2	$ 2.5
2004	$ 52.5	$ 36.5	$ 5.1	$ 29.4	$ 30.7	$ 4.6	$ 2.3	$ -	$ 3.2	$ 11.9	$ 17.8	$ 9.0	$ 0.8	$ 1.3	$ 2.6
2005	$ 54.2	$ 37.7	$ 5.3	$ 30.4	$ 31.7	$ 4.7	$ 2.4	$ -	$ 3.3	$ 12.3	$ 18.4	$ 9.3	$ 0.9	$ 1.3	$ 2.7
2006	$ 55.7	$ 38.7	$ 5.4	$ 31.2	$ 32.5	$ 4.8	$ 2.5	$ -	$ 3.4	$ 12.6	$ 18.9	$ 9.6	$ 0.9	$ 1.4	$ 2.8
2007	$ 57.0	$ 39.6	$ 5.5	$ 31.9	$ 33.3	$ 5.0	$ 2.5	$ -	$ 3.5	$ 12.9	$ 19.3	$ 9.8	$ 0.9	$ 1.4	$ 2.9
2008	$ 57.5	$ 40.0	$ 5.6	$ 32.2	$ 33.6	$ 5.0	$ 2.6	$ -	$ 3.5	$ 13.0	$ 19.5	$ 9.9	$ 0.9	$ 1.4	$ 2.9
2009	$ 57.3	$ 39.8	$ 5.6	$ 32.1	$ 33.5	$ 5.0	$ 2.5	$ -	$ 3.5	$ 13.0	$ 19.4	$ 9.9	$ 0.9	$ 1.4	$ 2.9
2010	$ 60.5	$ 42.0	$ 5.9	$ 33.9	$ 35.4	$ 5.3	$ 2.7	$ -	$ 3.7	$ 13.7	$ 20.5	$ 10.4	$ 1.0	$ 1.5	$ 3.1

	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World-44
1980	$ 0.9	$ 9.8	$ 12.7	$ 4.0	$ 2.8	$ 3.6	$ 12.3	$ 0.4	$ 4.4	$ 8.5	$ 25.8	$ 7.1	$ 2.5	$ 25.7	$ 3.5	$ 2.7	$ 444.8
1981	$ 0.9	$ 9.7	$ 12.4	$ 4.0	$ 2.7	$ 3.5	$ 12.0	$ 0.4	$ 4.4	$ 8.4	$ 25.3	$ 6.9	$ 2.5	$ 25.2	$ 3.4	$ 2.6	$ 436.5
1982	$ 0.9	$ 9.5	$ 12.2	$ 3.9	$ 2.7	$ 3.4	$ 11.8	$ 0.4	$ 4.3	$ 8.2	$ 24.8	$ 6.8	$ 2.4	$ 24.8	$ 3.3	$ 2.6	$ 428.3
1983	$ 0.9	$ 9.5	$ 12.2	$ 3.9	$ 2.7	$ 3.5	$ 11.9	$ 0.4	$ 4.3	$ 8.2	$ 24.9	$ 6.8	$ 2.4	$ 24.8	$ 3.3	$ 2.6	$ 429.5
1984	$ 1.0	$ 10.0	$ 12.9	$ 4.1	$ 2.8	$ 3.6	$ 12.5	$ 0.4	$ 4.5	$ 8.6	$ 26.2	$ 7.2	$ 2.6	$ 26.1	$ 3.5	$ 2.7	$ 451.6
1985	$ 1.0	$ 10.2	$ 13.1	$ 4.2	$ 2.9	$ 3.7	$ 12.7	$ 0.5	$ 4.6	$ 8.8	$ 26.7	$ 7.3	$ 2.6	$ 26.7	$ 3.6	$ 2.8	$ 461.6
1986	$ 1.0	$ 10.3	$ 13.3	$ 4.2	$ 2.9	$ 3.8	$ 12.9	$ 0.5	$ 4.7	$ 8.9	$ 27.1	$ 7.4	$ 2.6	$ 27.0	$ 3.6	$ 2.8	$ 467.5
1987	$ 1.0	$ 10.7	$ 13.8	$ 4.4	$ 3.0	$ 3.9	$ 13.3	$ 0.5	$ 4.8	$ 9.2	$ 28.0	$ 7.7	$ 2.7	$ 27.9	$ 3.8	$ 2.9	$ 483.2
1988	$ 1.1	$ 11.1	$ 14.3	$ 4.5	$ 3.2	$ 4.0	$ 13.8	$ 0.5	$ 5.0	$ 9.6	$ 29.1	$ 8.0	$ 2.8	$ 29.0	$ 3.9	$ 3.0	$ 501.5
1989	$ 1.1	$ 11.4	$ 14.6	$ 4.7	$ 3.2	$ 4.1	$ 14.2	$ 0.5	$ 5.1	$ 9.8	$ 29.8	$ 8.2	$ 2.9	$ 29.7	$ 4.0	$ 3.1	$ 514.3
1990	$ 1.1	$ 11.4	$ 14.7	$ 4.7	$ 3.2	$ 4.1	$ 14.2	$ 0.5	$ 5.2	$ 9.9	$ 29.9	$ 8.2	$ 2.9	$ 29.8	$ 4.0	$ 3.1	$ 516.0
1991	$ 1.2	$ 12.4	$ 15.9	$ 5.1	$ 3.5	$ 4.5	$ 15.4	$ 0.6	$ 5.6	$ 10.7	$ 32.4	$ 8.9	$ 3.2	$ 32.3	$ 4.4	$ 3.3	$ 559.3
1992	$ 1.4	$ 14.1	$ 18.1	$ 5.8	$ 4.0	$ 5.1	$ 17.6	$ 0.6	$ 6.4	$ 12.2	$ 36.9	$ 10.1	$ 3.6	$ 36.9	$ 5.0	$ 3.8	$ 637.6
1993	$ 1.4	$ 14.4	$ 18.5	$ 5.9	$ 4.1	$ 5.2	$ 17.9	$ 0.6	$ 6.5	$ 12.4	$ 37.6	$ 10.3	$ 3.7	$ 37.5	$ 5.1	$ 3.9	$ 649.0
1994	$ 1.4	$ 14.6	$ 18.8	$ 6.0	$ 4.1	$ 5.3	$ 18.2	$ 0.7	$ 6.6	$ 12.6	$ 38.2	$ 10.5	$ 3.7	$ 38.1	$ 5.1	$ 3.9	$ 659.5
1995	$ 1.4	$ 14.9	$ 19.1	$ 6.1	$ 4.2	$ 5.4	$ 18.5	$ 0.7	$ 6.7	$ 12.9	$ 38.9	$ 10.7	$ 3.8	$ 38.9	$ 5.2	$ 4.0	$ 671.9
1996	$ 1.5	$ 15.2	$ 19.6	$ 6.2	$ 4.3	$ 5.5	$ 19.0	$ 0.7	$ 6.9	$ 13.2	$ 39.9	$ 11.0	$ 3.9	$ 39.8	$ 5.4	$ 4.1	$ 688.4
1997	$ 1.5	$ 15.3	$ 19.7	$ 6.3	$ 4.4	$ 5.6	$ 19.1	$ 0.7	$ 6.9	$ 13.3	$ 40.2	$ 11.0	$ 3.9	$ 40.1	$ 5.4	$ 4.1	$ 693.3
1998	$ 1.5	$ 15.3	$ 19.7	$ 6.3	$ 4.4	$ 5.6	$ 19.1	$ 0.7	$ 6.9	$ 13.3	$ 40.2	$ 11.0	$ 3.9	$ 40.1	$ 5.4	$ 4.1	$ 693.5
1999	$ 1.5	$ 15.6	$ 20.1	$ 6.4	$ 4.4	$ 5.7	$ 19.5	$ 0.7	$ 7.0	$ 13.5	$ 40.9	$ 11.2	$ 4.0	$ 40.8	$ 5.5	$ 4.2	$ 706.0
2000	$ 1.6	$ 16.2	$ 20.8	$ 6.6	$ 4.6	$ 5.9	$ 20.2	$ 0.7	$ 7.3	$ 14.0	$ 42.3	$ 11.6	$ 4.1	$ 42.2	$ 5.7	$ 4.4	$ 730.4
2001	$ 1.6	$ 16.2	$ 20.8	$ 6.6	$ 4.6	$ 5.9	$ 20.2	$ 0.7	$ 7.3	$ 14.0	$ 42.4	$ 11.6	$ 4.1	$ 42.3	$ 5.7	$ 4.4	$ 731.1
2002	$ 1.6	$ 16.4	$ 21.2	$ 6.7	$ 4.7	$ 6.0	$ 20.5	$ 0.7	$ 7.4	$ 14.2	$ 43.1	$ 11.8	$ 4.2	$ 43.0	$ 5.8	$ 4.4	$ 743.4
2003	$ 1.7	$ 17.2	$ 22.1	$ 7.0	$ 4.9	$ 6.3	$ 21.4	$ 0.8	$ 7.8	$ 14.9	$ 45.0	$ 12.4	$ 4.4	$ 44.9	$ 6.1	$ 4.6	$ 777.2
2004	$ 1.7	$ 18.1	$ 23.3	$ 7.4	$ 5.1	$ 6.6	$ 22.5	$ 0.8	$ 8.2	$ 15.6	$ 47.3	$ 13.0	$ 4.6	$ 47.3	$ 6.4	$ 4.9	$ 817.0
2005	$ 1.8	$ 18.7	$ 24.0	$ 7.6	$ 5.3	$ 6.8	$ 23.3	$ 0.8	$ 8.4	$ 16.2	$ 48.9	$ 13.4	$ 4.8	$ 48.8	$ 6.6	$ 5.0	$ 844.1
2006	$ 1.8	$ 19.2	$ 24.7	$ 7.8	$ 5.4	$ 7.0	$ 23.9	$ 0.9	$ 8.7	$ 16.6	$ 50.2	$ 13.8	$ 4.9	$ 50.1	$ 6.8	$ 5.2	$ 866.3
2007	$ 1.9	$ 19.6	$ 25.2	$ 8.0	$ 5.6	$ 7.1	$ 24.5	$ 0.9	$ 8.9	$ 17.0	$ 51.4	$ 14.1	$ 5.0	$ 51.3	$ 6.9	$ 5.3	$ 886.6
2008	$ 1.9	$ 19.8	$ 25.5	$ 8.1	$ 5.6	$ 7.2	$ 24.7	$ 0.9	$ 8.9	$ 17.1	$ 51.9	$ 14.2	$ 5.1	$ 51.8	$ 7.0	$ 5.4	$ 895.5
2009	$ 1.9	$ 19.7	$ 25.4	$ 8.1	$ 5.6	$ 7.2	$ 24.6	$ 0.9	$ 8.9	$ 17.1	$ 51.7	$ 14.2	$ 5.1	$ 51.6	$ 7.0	$ 5.3	$ 892.4
2010	$ 2.0	$ 20.8	$ 26.8	$ 8.5	$ 5.9	$ 7.6	$ 26.0	$ 0.9	$ 9.4	$ 18.0	$ 54.6	$ 15.0	$ 5.3	$ 54.5	$ 7.3	$ 5.6	$ 941.8

Table 34. GDPPC Tax *fGDP*$_{e+CO2}$, 3% SCC, 1980-2010.

	United St	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T
1980	9%	7%	7%	26%	13%	6%	6%	11%	12%	6%	16%	18%	23%	24%	16%	14%	11%	14%	7%	30%	10%
1981	8%	6%	6%	21%	12%	5%	5%	10%	11%	6%	15%	17%	21%	23%	14%	13%	10%	13%	7%	26%	9%
1982	8%	6%	6%	20%	12%	5%	5%	9%	11%	5%	14%	16%	20%	22%	14%	13%	9%	12%	7%	21%	8%
1983	7%	5%	6%	20%	11%	5%	5%	9%	10%	5%	14%	16%	20%	21%	14%	12%	8%	12%	6%	19%	7%
1984	5%	5%	5%	14%	10%	4%	3%	9%	8%	5%	14%	15%	19%	21%	13%	9%	7%	12%	5%	15%	4%
1985	5%	5%	5%	15%	9%	4%	4%	10%	8%	5%	14%	15%	19%	21%	14%	11%	7%	12%	6%	15%	4%
1986	4%	5%	5%	15%	9%	4%	3%	10%	8%	5%	14%	14%	19%	21%	13%	10%	7%	11%	6%	13%	4%
1987	4%	4%	5%	15%	9%	4%	4%	9%	8%	5%	13%	14%	18%	21%	13%	10%	7%	11%	6%	13%	5%
1988	5%	5%	5%	14%	9%	4%	4%	9%	9%	5%	14%	15%	19%	21%	14%	12%	8%	12%	8%	17%	6%
1989	4%	5%	5%	13%	9%	4%	4%	7%	9%	5%	14%	16%	18%	22%	14%	10%	7%	11%	6%	13%	5%
1990	4%	5%	5%	13%	10%	4%	4%	7%	8%	5%	13%	15%	19%	23%	14%	10%	7%	11%	6%	18%	5%
1991	4%	4%	4%	9%	9%	4%	3%	6%	8%	5%	13%	16%	21%	23%	13%	9%	7%	11%	5%	16%	5%
1992	4%	4%	5%	10%	10%	4%	4%	6%	8%	5%	14%	17%	24%	25%	15%	9%	7%	12%	6%	8%	4%
1993	4%	4%	5%	13%	10%	5%	4%	6%	8%	5%	15%	18%	25%	25%	16%	10%	7%	12%	5%	9%	4%
1994	4%	4%	5%	9%	10%	4%	4%	5%	8%	5%	15%	18%	24%	24%	16%	10%	7%	13%	6%	8%	4%
1995	4%	4%	5%	8%	9%	4%	4%	4%	8%	5%	14%	17%	23%	23%	14%	10%	7%	12%	6%	8%	4%
1996	3%	4%	4%	7%	8%	4%	3%	4%	7%	4%	14%	17%	23%	22%	15%	8%	6%	11%	5%	7%	3%
1997	3%	4%	4%	8%	8%	4%	3%	4%	7%	4%	14%	16%	22%	21%	15%	9%	6%	11%	6%	7%	3%
1998	4%	4%	5%	8%	9%	5%	4%	4%	7%	4%	13%	16%	20%	19%	14%	11%	7%	12%	6%	8%	5%
1999	4%	3%	4%	7%	9%	4%	3%	4%	7%	4%	13%	16%	19%	20%	14%	10%	6%	11%	5%	6%	4%
2000	3%	3%	4%	7%	9%	4%	3%	4%	7%	4%	13%	16%	19%	20%	14%	10%	6%	12%	5%	7%	4%
2001	4%	3%	5%	7%	9%	4%	4%	4%	8%	4%	14%	17%	20%	20%	15%	12%	7%	12%	6%	7%	4%
2002	4%	4%	5%	10%	10%	4%	5%	5%	8%	5%	15%	17%	20%	20%	15%	14%	7%	13%	7%	10%	5%
2003	5%	4%	6%	12%	11%	5%	5%	6%	9%	5%	15%	18%	21%	21%	15%	16%	7%	14%	8%	12%	6%
2004	5%	5%	7%	13%	12%	5%	6%	6%	10%	6%	16%	19%	22%	22%	15%	16%	7%	15%	9%	12%	6%
2005	6%	5%	7%	13%	12%	5%	6%	6%	10%	6%	16%	19%	22%	22%	15%	17%	8%	16%	9%	13%	6%
2006	7%	6%	8%	17%	14%	6%	7%	8%	12%	7%	18%	20%	23%	23%	16%	19%	9%	18%	11%	17%	8%
2007	5%	5%	7%	13%	12%	5%	6%	6%	9%	6%	16%	19%	21%	22%	15%	13%	7%	15%	8%	12%	5%
2008	5%	5%	7%	16%	12%	6%	7%	7%	10%	7%	16%	20%	22%	24%	16%	14%	7%	16%	9%	13%	6%
2009	0%	2%	2%	1%	6%	1%	2%	1%	3%	1%	11%	17%	18%	18%	11%	2%	4%	9%	0%	0%	0%
2010	0%	2%	2%	1%	6%	1%	2%	1%	3%	1%	11%	17%	18%	19%	11%	2%	4%	9%	0%	0%	0%

	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeal	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuel	World-44
1980	11%	16%	11%	15%	10%	11%	17%	6%	15%	48%	14%	21%	6%	27%	9%	17%	13%	147%	12%	6%	14%	8%	14%	12%
1981	9%	15%	11%	13%	9%	9%	15%	5%	13%	52%	16%	19%	5%	25%	9%	15%	13%	151%	12%	6%	14%	7%	13%	12%
1982	9%	14%	10%	13%	9%	8%	16%	4%	12%	54%	16%	18%	5%	24%	8%	14%	12%	161%	11%	5%	13%	6%	12%	10%
1983	9%	14%	10%	13%	9%	8%	15%	5%	11%	52%	16%	17%	5%	22%	7%	13%	12%	171%	12%	5%	13%	6%	12%	9%
1984	8%	13%	9%	11%	6%	5%	10%	4%	9%	45%	14%	13%	3%	22%	4%	13%	11%	155%	8%	4%	13%	4%	8%	9%
1985	7%	14%	9%	12%	7%	6%	12%	4%	10%	51%	17%	14%	4%	23%	5%	15%	11%	181%	9%	4%	13%	5%	10%	8%
1986	7%	13%	9%	11%	6%	5%	11%	5%	9%	47%	15%	13%	4%	23%	4%	14%	11%	177%	8%	4%	13%	5%	8%	7%
1987	7%	12%	10%	11%	7%	6%	13%	5%	9%	47%	19%	14%	4%	23%	5%	12%	10%	182%	9%	4%	13%	5%	9%	7%
1988	8%	12%	11%	11%	8%	7%	14%	9%	9%	48%	19%	14%	5%	24%	5%	11%	11%	180%	9%	5%	13%	5%	10%	7%
1989	7%	12%	10%	11%	8%	6%	12%	12%	8%	36%	18%	13%	4%	25%	5%	12%	10%	175%	9%	5%	13%	5%	8%	7%
1990	7%	12%	10%	11%	8%	5%	11%	15%	8%	43%	17%	12%	4%	24%	5%	12%	9%	205%	8%	5%	13%	5%	9%	7%
1991	7%	13%	10%	13%	6%	5%	10%	24%	8%	76%	15%	11%	4%	26%	4%	12%	10%	226%	7%	4%	13%	5%	7%	7%
1992	7%	15%	11%	14%	6%	5%	10%	24%	8%	59%	18%	11%	3%	29%	3%	12%	11%	240%	8%	4%	15%	4%	8%	7%
1993	7%	15%	11%	15%	6%	5%	11%	28%	8%	46%	21%	11%	3%	28%	3%	12%	11%	246%	9%	5%	16%	5%	9%	6%
1994	7%	15%	12%	15%	6%	5%	12%	30%	9%	45%	21%	11%	4%	28%	4%	12%	12%	246%	9%	5%	16%	5%	9%	6%
1995	7%	14%	11%	14%	6%	5%	10%	28%	8%	42%	23%	10%	4%	27%	3%	10%	11%	239%	8%	4%	15%	5%	7%	6%
1996	6%	14%	11%	14%	5%	4%	8%	14%	7%	41%	21%	8%	3%	26%	3%	8%	10%	228%	7%	4%	15%	4%	6%	6%
1997	6%	14%	11%	14%	5%	5%	9%	12%	8%	44%	24%	9%	3%	25%	3%	8%	10%	179%	8%	4%	15%	4%	8%	6%
1998	7%	14%	11%	14%	7%	8%	12%	16%	9%	44%	26%	11%	4%	25%	5%	8%	10%	165%	10%	4%	15%	5%	9%	5%
1999	6%	14%	11%	13%	5%	7%	11%	15%	8%	45%	26%	10%	4%	24%	5%	7%	10%	159%	9%	4%	15%	4%	9%	5%
2000	6%	14%	11%	14%	5%	7%	10%	17%	8%	45%	26%	10%	4%	25%	5%	7%	10%	148%	10%	4%	15%	5%	10%	6%
2001	7%	16%	11%	14%	6%	8%	11%	27%	8%	45%	27%	10%	4%	25%	5%	8%	11%	144%	10%	5%	15%	5%	11%	5%
2002	8%	18%	11%	15%	7%	10%	15%	27%	8%	47%	30%	12%	5%	25%	5%	9%	11%	138%	12%	5%	15%	5%	12%	5%
2003	9%	19%	12%	17%	8%	12%	24%	38%	9%	47%	31%	14%	7%	26%	7%	10%	12%	141%	15%	6%	16%	6%	12%	6%
2004	9%	19%	13%	18%	9%	12%	28%	33%	10%	48%	32%	15%	8%	26%	6%	10%	13%	123%	17%	7%	16%	7%	15%	7%
2005	9%	19%	13%	18%	10%	13%	29%	36%	10%	47%	31%	16%	8%	27%	6%	10%	13%	118%	18%	9%	16%	8%	16%	8%
2006	11%	21%	14%	21%	11%	15%	35%	50%	11%	51%	36%	18%	10%	28%	7%	12%	15%	104%	24%	10%	17%	9%	22%	8%
2007	8%	19%	12%	19%	8%	10%	25%	41%	9%	44%	29%	14%	6%	26%	4%	9%	13%	84%	18%	8%	16%	7%	16%	8%
2008	9%	19%	13%	20%	11%	12%	30%	58%	11%	48%	33%	16%	8%	27%	5%	10%	15%	71%	22%	8%	16%	8%	22%	10%
2009	2%	9%	8%	9%	0%	0%	1%	5%	2%	29%	15%	3%	1%	21%	1%	2%	9%	59%	4%	2%	13%	1%	3%	8%
2010	2%	9%	8%	10%	0%	0%	1%	5%	2%	30%	16%	3%	1%	21%	1%	2%	9%	53%	4%	2%	13%	1%	3%	9%

Table 35. GDPPC Tax 2005$ U.S. Billions, 2.5% SCC, 1980-2010.

	United Stat	United Kin	Spain	Russia	Netherlanc	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	$ 30.0	$ 26.9	$ 17.9	$ 4.4	$ 29.8	$ 24.9	$ 21.0	$ 25.3	$ 24.9	$ 24.0	$ 27.2	$ 32.6	$ 27.1	$ 44.0	$ 30.6
1981	$ 29.4	$ 26.4	$ 17.5	$ 4.3	$ 29.2	$ 24.4	$ 20.6	$ 24.8	$ 24.4	$ 23.6	$ 26.7	$ 32.0	$ 26.6	$ 43.2	$ 30.0
1982	$ 28.9	$ 25.9	$ 17.2	$ 4.2	$ 28.7	$ 23.9	$ 20.2	$ 24.4	$ 23.9	$ 23.1	$ 26.2	$ 31.4	$ 26.1	$ 42.4	$ 29.5
1983	$ 28.9	$ 26.0	$ 17.2	$ 4.2	$ 28.7	$ 24.0	$ 20.3	$ 24.4	$ 24.0	$ 23.2	$ 26.3	$ 31.5	$ 26.1	$ 42.5	$ 29.5
1984	$ 30.4	$ 27.3	$ 18.1	$ 4.4	$ 30.2	$ 25.2	$ 21.3	$ 25.7	$ 25.2	$ 24.4	$ 27.7	$ 33.1	$ 27.5	$ 44.7	$ 31.1
1985	$ 31.1	$ 27.9	$ 18.5	$ 4.5	$ 30.9	$ 25.8	$ 21.8	$ 26.3	$ 25.8	$ 24.9	$ 28.3	$ 33.8	$ 28.1	$ 45.7	$ 31.7
1986	$ 31.5	$ 28.3	$ 18.8	$ 4.6	$ 31.3	$ 26.1	$ 22.1	$ 26.6	$ 26.1	$ 25.2	$ 28.6	$ 34.2	$ 28.4	$ 46.3	$ 32.2
1987	$ 32.6	$ 29.2	$ 19.4	$ 4.7	$ 32.3	$ 27.0	$ 22.8	$ 27.5	$ 27.0	$ 26.1	$ 29.6	$ 35.4	$ 29.4	$ 47.8	$ 33.2
1988	$ 33.8	$ 30.3	$ 20.1	$ 4.9	$ 33.6	$ 28.0	$ 23.7	$ 28.5	$ 28.0	$ 27.1	$ 30.7	$ 36.7	$ 30.5	$ 49.6	$ 34.5
1989	$ 34.7	$ 31.1	$ 20.6	$ 5.0	$ 34.4	$ 28.7	$ 24.3	$ 29.3	$ 28.7	$ 27.8	$ 31.5	$ 37.7	$ 31.3	$ 50.9	$ 35.4
1990	$ 34.8	$ 31.2	$ 20.7	$ 5.0	$ 34.5	$ 28.8	$ 24.3	$ 29.4	$ 28.8	$ 27.8	$ 31.6	$ 37.8	$ 31.4	$ 51.1	$ 35.5
1991	$ 37.7	$ 33.8	$ 22.5	$ 5.5	$ 37.4	$ 31.3	$ 26.4	$ 31.8	$ 31.3	$ 30.2	$ 34.3	$ 41.0	$ 34.0	$ 55.4	$ 38.5
1992	$ 43.0	$ 38.6	$ 25.6	$ 6.2	$ 42.7	$ 35.6	$ 30.1	$ 36.3	$ 35.6	$ 34.4	$ 39.1	$ 46.7	$ 38.8	$ 63.1	$ 43.8
1993	$ 43.7	$ 39.3	$ 26.1	$ 6.4	$ 43.4	$ 36.3	$ 30.6	$ 36.9	$ 36.3	$ 35.0	$ 39.8	$ 47.5	$ 39.5	$ 64.2	$ 44.6
1994	$ 44.4	$ 39.9	$ 26.5	$ 6.5	$ 44.1	$ 36.9	$ 31.1	$ 37.5	$ 36.9	$ 35.6	$ 40.4	$ 48.3	$ 40.1	$ 65.3	$ 45.4
1995	$ 45.3	$ 40.6	$ 27.0	$ 6.6	$ 45.0	$ 37.6	$ 31.7	$ 38.2	$ 37.5	$ 36.3	$ 41.2	$ 49.2	$ 40.9	$ 66.5	$ 46.2
1996	$ 46.4	$ 41.6	$ 27.6	$ 6.7	$ 46.1	$ 38.5	$ 32.5	$ 39.2	$ 38.5	$ 37.2	$ 42.2	$ 50.4	$ 41.9	$ 68.1	$ 47.3
1997	$ 46.7	$ 41.9	$ 27.8	$ 6.8	$ 46.4	$ 38.7	$ 32.7	$ 39.5	$ 38.7	$ 37.4	$ 42.5	$ 50.8	$ 42.2	$ 68.6	$ 47.7
1998	$ 46.7	$ 42.0	$ 27.8	$ 6.8	$ 46.4	$ 38.8	$ 32.7	$ 39.5	$ 38.8	$ 37.4	$ 42.5	$ 50.8	$ 42.2	$ 68.6	$ 47.7
1999	$ 47.6	$ 42.7	$ 28.3	$ 6.9	$ 47.3	$ 39.5	$ 33.3	$ 40.2	$ 39.5	$ 38.1	$ 43.2	$ 51.7	$ 43.0	$ 69.9	$ 48.6
2000	$ 49.2	$ 44.2	$ 29.3	$ 7.1	$ 48.9	$ 40.8	$ 34.5	$ 41.6	$ 40.8	$ 39.4	$ 44.7	$ 53.5	$ 44.4	$ 72.3	$ 50.2
2001	$ 49.3	$ 44.2	$ 29.3	$ 7.2	$ 48.9	$ 40.9	$ 34.5	$ 41.6	$ 40.9	$ 39.5	$ 44.8	$ 53.5	$ 44.5	$ 72.4	$ 50.3
2002	$ 50.1	$ 45.0	$ 29.8	$ 7.3	$ 49.8	$ 41.6	$ 35.1	$ 42.3	$ 41.5	$ 40.1	$ 45.5	$ 54.4	$ 45.2	$ 73.6	$ 51.1
2003	$ 52.4	$ 47.0	$ 31.2	$ 7.6	$ 52.0	$ 43.4	$ 36.7	$ 44.2	$ 43.4	$ 41.9	$ 47.6	$ 56.9	$ 47.3	$ 76.9	$ 53.5
2004	$ 55.0	$ 49.4	$ 32.8	$ 8.0	$ 54.7	$ 45.7	$ 38.5	$ 46.5	$ 45.7	$ 44.1	$ 50.0	$ 59.8	$ 49.7	$ 80.9	$ 56.2
2005	$ 56.9	$ 51.1	$ 33.9	$ 8.3	$ 56.5	$ 47.2	$ 39.8	$ 48.1	$ 47.2	$ 45.6	$ 51.7	$ 61.8	$ 51.4	$ 83.6	$ 58.1
2006	$ 58.4	$ 52.4	$ 34.8	$ 8.5	$ 58.0	$ 48.4	$ 40.9	$ 49.3	$ 48.4	$ 46.8	$ 53.1	$ 63.4	$ 52.7	$ 85.8	$ 59.6
2007	$ 59.7	$ 53.6	$ 35.6	$ 8.7	$ 59.3	$ 49.6	$ 41.8	$ 50.5	$ 49.5	$ 47.8	$ 54.3	$ 64.9	$ 53.9	$ 87.8	$ 61.0
2008	$ 60.3	$ 54.2	$ 35.9	$ 8.8	$ 59.9	$ 50.1	$ 42.3	$ 51.0	$ 50.0	$ 48.3	$ 54.9	$ 65.6	$ 54.5	$ 88.6	$ 61.6
2009	$ 60.1	$ 54.0	$ 35.8	$ 8.7	$ 59.7	$ 49.9	$ 42.1	$ 50.8	$ 49.9	$ 48.2	$ 54.7	$ 65.4	$ 54.3	$ 88.3	$ 61.4
2010	$ 63.5	$ 57.0	$ 37.8	$ 9.2	$ 63.0	$ 52.6	$ 44.4	$ 53.6	$ 52.6	$ 50.8	$ 57.7	$ 69.0	$ 57.3	$ 93.2	$ 64.8

	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerlan	Turkey	Venezuela	World-44
1980	$ 4.3	$ 24.7	$ 25.7	$ 3.8	$ 2.0	$ -	$ 2.7	$ 10.0	$ 14.9	$ 7.6	$ 0.7	$ 1.1	$ 2.2	$ 1.5	$ 15.2	$ 19.5	$ 6.2	$ 4.3	$ 5.5	$ 18.9	$ 0.7	$ 6.8	$ 13.1	$ 39.7	$ 10.9	$ 3.9	$ 39.6	$ 5.3	$ 4.1	$ 685.2
1981	$ 4.2	$ 24.2	$ 25.2	$ 3.8	$ 1.9	$ -	$ 2.6	$ 9.8	$ 14.6	$ 7.4	$ 0.7	$ 1.1	$ 2.2	$ 1.4	$ 14.9	$ 19.1	$ 6.1	$ 4.2	$ 5.4	$ 18.6	$ 0.7	$ 6.7	$ 12.9	$ 39.0	$ 10.7	$ 3.8	$ 38.9	$ 5.2	$ 4.0	$ 672.5
1982	$ 4.1	$ 23.7	$ 24.8	$ 3.7	$ 1.9	$ -	$ 2.6	$ 9.6	$ 14.4	$ 7.3	$ 0.7	$ 1.0	$ 2.1	$ 1.4	$ 14.6	$ 18.8	$ 6.0	$ 4.1	$ 5.3	$ 18.2	$ 0.7	$ 6.6	$ 12.6	$ 38.2	$ 10.5	$ 3.7	$ 38.2	$ 5.1	$ 3.9	$ 659.9
1983	$ 4.1	$ 23.8	$ 24.8	$ 3.7	$ 1.9	$ -	$ 2.6	$ 9.6	$ 14.4	$ 7.3	$ 0.7	$ 1.0	$ 2.1	$ 1.4	$ 14.6	$ 18.8	$ 6.0	$ 4.2	$ 5.3	$ 18.3	$ 0.7	$ 6.6	$ 12.7	$ 38.3	$ 10.5	$ 3.7	$ 38.3	$ 5.2	$ 4.0	$ 661.6
1984	$ 4.3	$ 25.0	$ 26.1	$ 3.9	$ 2.0	$ -	$ 2.7	$ 10.1	$ 15.2	$ 7.7	$ 0.7	$ 1.1	$ 2.3	$ 1.5	$ 15.4	$ 19.8	$ 6.3	$ 4.4	$ 5.6	$ 19.2	$ 0.7	$ 6.9	$ 13.3	$ 40.3	$ 11.1	$ 3.9	$ 40.2	$ 5.4	$ 4.2	$ 695.8
1985	$ 4.4	$ 25.6	$ 26.7	$ 4.0	$ 2.0	$ -	$ 2.8	$ 10.4	$ 15.5	$ 7.9	$ 0.7	$ 1.1	$ 2.3	$ 1.5	$ 15.7	$ 20.2	$ 6.4	$ 4.5	$ 5.7	$ 19.6	$ 0.7	$ 7.1	$ 13.6	$ 41.2	$ 11.3	$ 4.0	$ 41.1	$ 5.5	$ 4.3	$ 711.1
1986	$ 4.5	$ 25.9	$ 27.0	$ 4.0	$ 2.1	$ -	$ 2.8	$ 10.5	$ 15.7	$ 8.0	$ 0.7	$ 1.1	$ 2.3	$ 1.5	$ 15.9	$ 20.5	$ 6.5	$ 4.5	$ 5.8	$ 19.9	$ 0.7	$ 7.2	$ 13.8	$ 41.7	$ 11.5	$ 4.1	$ 41.7	$ 5.6	$ 4.3	$ 720.2
1987	$ 4.7	$ 26.8	$ 28.0	$ 4.2	$ 2.1	$ -	$ 2.9	$ 10.8	$ 16.2	$ 8.2	$ 0.8	$ 1.2	$ 2.4	$ 1.6	$ 16.5	$ 21.2	$ 6.7	$ 4.7	$ 6.0	$ 20.5	$ 0.7	$ 7.4	$ 14.2	$ 43.1	$ 11.8	$ 4.2	$ 43.1	$ 5.8	$ 4.5	$ 744.4
1988	$ 4.8	$ 27.8	$ 29.0	$ 4.3	$ 2.2	$ -	$ 3.0	$ 11.3	$ 16.8	$ 8.5	$ 0.8	$ 1.2	$ 2.5	$ 1.6	$ 17.1	$ 22.0	$ 7.0	$ 4.9	$ 6.2	$ 21.3	$ 0.8	$ 7.7	$ 14.8	$ 44.8	$ 12.3	$ 4.4	$ 44.7	$ 6.0	$ 4.6	$ 772.6
1989	$ 5.0	$ 28.5	$ 29.8	$ 4.4	$ 2.3	$ -	$ 3.1	$ 11.5	$ 17.3	$ 8.8	$ 0.8	$ 1.2	$ 2.6	$ 1.7	$ 17.5	$ 22.6	$ 7.2	$ 5.0	$ 6.4	$ 21.9	$ 0.8	$ 7.9	$ 15.2	$ 45.9	$ 12.6	$ 4.5	$ 45.8	$ 6.2	$ 4.7	$ 792.4
1990	$ 5.0	$ 28.6	$ 29.8	$ 4.4	$ 2.3	$ -	$ 3.1	$ 11.6	$ 17.3	$ 8.8	$ 0.8	$ 1.2	$ 2.6	$ 1.7	$ 17.6	$ 22.6	$ 7.2	$ 5.0	$ 6.4	$ 21.9	$ 0.8	$ 7.9	$ 15.2	$ 46.1	$ 12.6	$ 4.5	$ 46.0	$ 6.2	$ 4.8	$ 795.0
1991	$ 5.4	$ 31.0	$ 32.4	$ 4.8	$ 2.5	$ -	$ 3.4	$ 12.5	$ 18.8	$ 9.5	$ 0.9	$ 1.3	$ 2.8	$ 1.8	$ 19.1	$ 24.5	$ 7.8	$ 5.4	$ 6.9	$ 23.8	$ 0.9	$ 8.6	$ 16.5	$ 49.9	$ 13.7	$ 4.9	$ 49.8	$ 6.7	$ 5.2	$ 861.7
1992	$ 6.1	$ 35.3	$ 36.9	$ 5.5	$ 2.8	$ -	$ 3.8	$ 14.3	$ 21.4	$ 10.9	$ 1.0	$ 1.5	$ 3.2	$ 2.1	$ 21.7	$ 28.0	$ 8.9	$ 6.2	$ 7.9	$ 27.1	$ 1.0	$ 9.8	$ 18.8	$ 56.9	$ 15.6	$ 5.6	$ 56.8	$ 7.7	$ 5.9	$ 982.2
1993	$ 6.3	$ 36.0	$ 37.5	$ 5.6	$ 2.9	$ -	$ 3.9	$ 14.6	$ 21.8	$ 11.0	$ 1.0	$ 1.6	$ 3.2	$ 2.1	$ 22.1	$ 28.5	$ 9.0	$ 6.3	$ 8.0	$ 27.6	$ 1.0	$ 10.0	$ 19.1	$ 57.9	$ 15.9	$ 5.7	$ 57.8	$ 7.8	$ 6.0	$ 999.9
1994	$ 6.4	$ 36.6	$ 38.1	$ 5.7	$ 2.9	$ -	$ 4.0	$ 14.8	$ 22.1	$ 11.2	$ 1.0	$ 1.6	$ 3.3	$ 2.2	$ 22.5	$ 28.9	$ 9.2	$ 6.4	$ 8.2	$ 28.0	$ 1.0	$ 10.1	$ 19.4	$ 58.9	$ 16.2	$ 5.8	$ 58.8	$ 7.9	$ 6.1	$ 1,016.0
1995	$ 6.5	$ 37.2	$ 38.9	$ 5.8	$ 3.0	$ -	$ 4.1	$ 15.1	$ 22.5	$ 11.4	$ 1.1	$ 1.6	$ 3.4	$ 2.2	$ 22.9	$ 29.5	$ 9.4	$ 6.5	$ 8.3	$ 28.6	$ 1.0	$ 10.3	$ 19.8	$ 60.0	$ 16.5	$ 5.9	$ 59.9	$ 8.1	$ 6.2	$ 1,035.1
1996	$ 6.6	$ 38.2	$ 39.8	$ 5.9	$ 3.0	$ -	$ 4.2	$ 15.4	$ 23.1	$ 11.7	$ 1.1	$ 1.7	$ 3.4	$ 2.3	$ 23.5	$ 30.2	$ 9.6	$ 6.7	$ 8.5	$ 29.3	$ 1.1	$ 10.6	$ 20.3	$ 61.5	$ 16.9	$ 6.0	$ 61.3	$ 8.3	$ 6.3	$ 1,060.5
1997	$ 6.7	$ 38.4	$ 40.1	$ 6.0	$ 3.0	$ -	$ 4.2	$ 15.6	$ 23.3	$ 11.8	$ 1.1	$ 1.7	$ 3.5	$ 2.3	$ 23.6	$ 30.4	$ 9.7	$ 6.7	$ 8.6	$ 29.5	$ 1.1	$ 10.7	$ 20.4	$ 61.9	$ 17.0	$ 6.0	$ 61.8	$ 8.3	$ 6.4	$ 1,068.0
1998	$ 6.7	$ 38.4	$ 40.1	$ 6.0	$ 3.1	$ -	$ 4.2	$ 15.6	$ 23.3	$ 11.8	$ 1.1	$ 1.7	$ 3.5	$ 2.3	$ 23.6	$ 30.4	$ 9.7	$ 6.7	$ 8.6	$ 29.5	$ 1.1	$ 10.7	$ 20.4	$ 61.9	$ 17.0	$ 6.1	$ 61.8	$ 8.3	$ 6.4	$ 1,068.5
1999	$ 6.8	$ 39.1	$ 40.8	$ 6.1	$ 3.1	$ -	$ 4.3	$ 15.8	$ 23.7	$ 12.0	$ 1.1	$ 1.7	$ 3.5	$ 2.3	$ 24.1	$ 31.0	$ 9.8	$ 6.8	$ 8.7	$ 30.0	$ 1.1	$ 10.9	$ 20.8	$ 63.0	$ 17.3	$ 6.2	$ 62.9	$ 8.5	$ 6.5	$ 1,087.7
2000	$ 7.0	$ 40.5	$ 42.2	$ 6.3	$ 3.2	$ -	$ 4.4	$ 16.4	$ 24.5	$ 12.4	$ 1.2	$ 1.8	$ 3.6	$ 2.4	$ 24.9	$ 32.0	$ 10.2	$ 7.1	$ 9.0	$ 31.1	$ 1.1	$ 11.2	$ 21.5	$ 65.2	$ 17.9	$ 6.4	$ 65.1	$ 8.8	$ 6.7	$ 1,125.2
2001	$ 7.0	$ 40.5	$ 42.3	$ 6.3	$ 3.2	$ -	$ 4.4	$ 16.4	$ 24.5	$ 12.4	$ 1.2	$ 1.8	$ 3.7	$ 2.4	$ 24.9	$ 32.1	$ 10.2	$ 7.1	$ 9.1	$ 31.1	$ 1.1	$ 11.2	$ 21.6	$ 65.3	$ 17.9	$ 6.4	$ 65.1	$ 8.8	$ 6.7	$ 1,126.4
2002	$ 7.2	$ 41.2	$ 43.0	$ 6.4	$ 3.3	$ -	$ 4.5	$ 16.7	$ 24.9	$ 12.7	$ 1.2	$ 1.8	$ 3.7	$ 2.4	$ 25.3	$ 32.6	$ 10.4	$ 7.2	$ 9.2	$ 31.6	$ 1.1	$ 11.4	$ 21.9	$ 66.4	$ 18.2	$ 6.5	$ 66.2	$ 8.9	$ 6.8	$ 1,145.3
2003	$ 7.5	$ 43.1	$ 45.0	$ 6.7	$ 3.4	$ -	$ 4.7	$ 17.4	$ 26.1	$ 13.2	$ 1.2	$ 1.9	$ 3.9	$ 2.6	$ 26.5	$ 34.1	$ 10.8	$ 7.5	$ 9.6	$ 33.0	$ 1.2	$ 12.0	$ 22.9	$ 69.4	$ 19.0	$ 6.8	$ 69.2	$ 9.3	$ 7.2	$ 1,197.3
2004	$ 7.9	$ 45.3	$ 47.3	$ 7.0	$ 3.6	$ -	$ 4.9	$ 18.3	$ 27.4	$ 13.9	$ 1.3	$ 2.0	$ 4.1	$ 2.7	$ 27.8	$ 35.8	$ 11.4	$ 7.9	$ 10.1	$ 34.7	$ 1.2	$ 12.6	$ 24.1	$ 72.9	$ 20.0	$ 7.1	$ 72.8	$ 9.8	$ 7.5	$ 1,258.7
2005	$ 8.1	$ 46.8	$ 48.8	$ 7.3	$ 3.7	$ -	$ 5.1	$ 18.9	$ 28.3	$ 14.4	$ 1.3	$ 2.0	$ 4.2	$ 2.8	$ 28.8	$ 37.0	$ 11.8	$ 8.2	$ 10.5	$ 35.9	$ 1.3	$ 13.0	$ 24.9	$ 75.4	$ 20.7	$ 7.4	$ 75.2	$ 10.1	$ 7.8	$ 1,300.5
2006	$ 8.3	$ 48.0	$ 50.1	$ 7.5	$ 3.8	$ -	$ 5.2	$ 19.4	$ 29.1	$ 14.7	$ 1.4	$ 2.1	$ 4.3	$ 2.8	$ 29.5	$ 38.0	$ 12.1	$ 8.4	$ 10.7	$ 36.8	$ 1.3	$ 13.3	$ 25.5	$ 77.3	$ 21.2	$ 7.6	$ 77.2	$ 10.4	$ 8.0	$ 1,334.6
2007	$ 8.5	$ 49.2	$ 51.3	$ 7.6	$ 3.9	$ -	$ 5.4	$ 19.9	$ 29.7	$ 15.1	$ 1.4	$ 2.1	$ 4.4	$ 2.9	$ 30.2	$ 38.9	$ 12.4	$ 8.6	$ 11.0	$ 37.7	$ 1.4	$ 13.6	$ 26.1	$ 79.2	$ 21.7	$ 7.7	$ 79.0	$ 10.6	$ 8.2	$ 1,365.9
2008	$ 8.6	$ 49.6	$ 51.8	$ 7.7	$ 3.9	$ -	$ 5.4	$ 20.1	$ 30.0	$ 15.2	$ 1.4	$ 2.2	$ 4.5	$ 2.9	$ 30.5	$ 39.3	$ 12.5	$ 8.7	$ 11.1	$ 38.1	$ 1.4	$ 13.8	$ 26.4	$ 80.0	$ 22.0	$ 7.8	$ 79.8	$ 10.8	$ 8.2	$ 1,379.6
2009	$ 8.6	$ 49.5	$ 51.6	$ 7.7	$ 3.9	$ -	$ 5.4	$ 20.0	$ 29.9	$ 15.2	$ 1.4	$ 2.1	$ 4.5	$ 2.9	$ 30.4	$ 39.1	$ 12.4	$ 8.6	$ 11.1	$ 37.9	$ 1.4	$ 13.7	$ 26.3	$ 79.7	$ 21.9	$ 7.8	$ 79.5	$ 10.7	$ 8.2	$ 1,374.9
2010	$ 9.1	$ 52.2	$ 54.5	$ 8.1	$ 4.1	$ -	$ 5.7	$ 21.1	$ 31.6	$ 16.0	$ 1.5	$ 2.3	$ 4.7	$ 3.1	$ 32.1	$ 41.3	$ 13.1	$ 9.1	$ 11.7	$ 40.0	$ 1.4	$ 14.5	$ 27.8	$ 84.1	$ 23.1	$ 8.2	$ 83.9	$ 11.3	$ 8.7	$ 1,451.0

Table 36. GDPPC Tax *$fGDP_{e+CO2}$*, 2.5% SCC, 1980-2010.

	United Stat	United Kin	Spain	Russia	Netherlanc	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	9%	8%	8%	26%	16%	6%	6%	12%	14%	7%	21%	26%	32%	34%	21%
1981	8%	7%	7%	21%	15%	6%	6%	11%	13%	6%	20%	24%	30%	33%	19%
1982	8%	7%	7%	21%	14%	5%	5%	10%	12%	6%	19%	23%	28%	32%	18%
1983	7%	6%	7%	20%	14%	5%	5%	10%	11%	6%	19%	23%	28%	31%	19%
1984	5%	6%	6%	14%	13%	4%	4%	10%	10%	6%	19%	22%	27%	31%	18%
1985	5%	6%	6%	16%	12%	5%	4%	11%	10%	6%	19%	22%	28%	30%	18%
1986	5%	5%	6%	15%	12%	4%	4%	10%	9%	5%	19%	21%	27%	30%	18%
1987	5%	5%	6%	15%	12%	4%	4%	9%	10%	5%	19%	21%	27%	30%	18%
1988	5%	6%	6%	14%	12%	4%	5%	9%	10%	6%	19%	22%	27%	31%	19%
1989	4%	6%	6%	13%	12%	4%	5%	8%	10%	6%	19%	23%	26%	31%	19%
1990	4%	5%	6%	14%	12%	4%	5%	7%	10%	6%	18%	22%	27%	32%	19%
1991	4%	5%	6%	9%	12%	4%	4%	7%	10%	5%	19%	23%	30%	33%	19%
1992	4%	5%	6%	10%	13%	4%	4%	6%	10%	5%	20%	26%	35%	35%	21%
1993	4%	5%	6%	14%	14%	5%	4%	7%	10%	6%	21%	26%	36%	36%	22%
1994	4%	5%	6%	10%	13%	5%	5%	5%	10%	6%	21%	26%	35%	34%	22%
1995	4%	5%	6%	8%	12%	4%	4%	5%	9%	5%	20%	25%	34%	33%	20%
1996	3%	5%	5%	7%	11%	4%	4%	4%	8%	5%	20%	25%	33%	32%	21%
1997	3%	4%	5%	9%	11%	4%	4%	4%	9%	5%	19%	24%	32%	31%	20%
1998	4%	4%	6%	9%	12%	5%	4%	4%	9%	5%	19%	24%	29%	29%	20%
1999	4%	4%	6%	8%	11%	4%	4%	4%	8%	5%	19%	24%	29%	29%	19%
2000	4%	4%	5%	7%	12%	4%	4%	4%	8%	5%	19%	24%	28%	29%	19%
2001	4%	4%	6%	7%	12%	4%	5%	5%	9%	5%	19%	24%	28%	30%	20%
2002	4%	5%	6%	10%	12%	5%	5%	6%	10%	6%	20%	25%	29%	30%	20%
2003	5%	5%	7%	13%	14%	5%	6%	6%	11%	6%	21%	26%	30%	31%	21%
2004	5%	6%	8%	14%	15%	5%	7%	7%	11%	6%	22%	27%	31%	32%	21%
2005	6%	6%	8%	14%	15%	5%	7%	7%	11%	7%	22%	28%	31%	32%	21%
2006	7%	7%	9%	17%	17%	6%	8%	9%	13%	8%	23%	29%	32%	32%	21%
2007	5%	5%	8%	14%	15%	5%	7%	7%	10%	7%	22%	27%	30%	32%	20%
2008	5%	6%	9%	16%	15%	6%	7%	7%	11%	7%	22%	28%	31%	33%	21%
2009	0%	2%	3%	1%	9%	1%	2%	2%	4%	2%	17%	26%	27%	28%	16%
2010	0%	2%	3%	1%	9%	1%	3%	2%	4%	2%	18%	27%	28%	29%	16%

	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerlan	Turkey	Venezuela	World-44
1980	15%	14%	18%	8%	31%	10%	12%	20%	15%	18%	10%	12%	18%	6%	19%	65%	18%	26%	6%	38%	9%	18%	18%	226%	14%	7%	20%	9%	15%	13%
1981	14%	12%	17%	7%	26%	9%	10%	18%	14%	17%	9%	10%	16%	5%	17%	72%	21%	24%	6%	36%	9%	16%	17%	230%	14%	7%	19%	8%	15%	13%
1982	14%	12%	16%	7%	21%	8%	10%	17%	14%	16%	9%	9%	16%	5%	15%	77%	21%	22%	6%	34%	8%	15%	16%	247%	13%	6%	18%	7%	13%	12%
1983	13%	11%	16%	6%	19%	7%	10%	17%	14%	16%	9%	9%	16%	5%	14%	73%	21%	21%	6%	32%	7%	15%	16%	261%	14%	6%	18%	7%	13%	10%
1984	11%	10%	16%	5%	15%	4%	9%	16%	13%	14%	6%	6%	11%	4%	12%	66%	20%	17%	4%	32%	5%	14%	16%	237%	10%	5%	18%	5%	10%	10%
1985	12%	10%	16%	6%	16%	4%	9%	18%	13%	15%	7%	6%	13%	5%	12%	73%	23%	18%	4%	33%	6%	16%	16%	278%	12%	5%	18%	6%	12%	9%
1986	11%	9%	15%	6%	13%	4%	9%	17%	13%	15%	6%	5%	12%	5%	11%	68%	22%	17%	4%	33%	5%	15%	15%	271%	10%	5%	18%	5%	10%	8%
1987	12%	9%	15%	7%	13%	5%	9%	16%	14%	14%	7%	6%	14%	6%	11%	67%	27%	18%	5%	34%	5%	13%	15%	278%	11%	5%	18%	5%	10%	8%
1988	13%	10%	16%	8%	17%	6%	9%	16%	14%	15%	8%	7%	15%	9%	11%	71%	26%	18%	5%	35%	6%	12%	15%	276%	11%	6%	19%	6%	12%	8%
1989	12%	10%	15%	7%	13%	5%	8%	16%	14%	15%	8%	6%	13%	13%	10%	55%	25%	16%	5%	36%	5%	13%	14%	268%	11%	6%	18%	6%	10%	8%
1990	12%	9%	15%	7%	18%	5%	8%	16%	14%	15%	8%	6%	12%	16%	10%	65%	24%	15%	4%	35%	5%	13%	13%	314%	11%	6%	18%	6%	10%	8%
1991	11%	9%	15%	6%	16%	5%	8%	18%	14%	17%	6%	5%	11%	26%	10%	116%	22%	14%	4%	38%	4%	14%	14%	348%	10%	5%	19%	6%	9%	8%
1992	11%	10%	16%	6%	9%	4%	8%	20%	15%	19%	6%	5%	11%	27%	10%	89%	26%	15%	4%	43%	4%	14%	15%	368%	11%	6%	21%	5%	10%	8%
1993	11%	10%	17%	6%	9%	4%	8%	21%	16%	20%	6%	5%	12%	31%	10%	69%	29%	14%	4%	42%	4%	14%	16%	377%	11%	6%	22%	6%	11%	8%
1994	12%	10%	17%	6%	8%	4%	8%	21%	16%	20%	6%	5%	13%	34%	10%	66%	29%	14%	4%	40%	4%	14%	16%	376%	12%	6%	22%	6%	11%	7%
1995	11%	9%	16%	6%	8%	4%	8%	20%	16%	19%	6%	5%	11%	31%	10%	63%	32%	12%	4%	40%	4%	12%	16%	368%	11%	5%	22%	6%	9%	7%
1996	10%	9%	16%	6%	7%	3%	7%	19%	16%	19%	5%	4%	8%	18%	8%	63%	31%	10%	3%	38%	3%	10%	15%	350%	9%	5%	22%	5%	8%	7%
1997	10%	9%	16%	6%	7%	3%	7%	19%	15%	19%	5%	5%	10%	15%	9%	65%	33%	11%	4%	38%	4%	10%	15%	275%	11%	5%	22%	5%	9%	7%
1998	12%	9%	16%	7%	8%	5%	8%	20%	16%	19%	7%	8%	13%	19%	11%	65%	36%	13%	5%	37%	6%	9%	15%	253%	12%	6%	21%	6%	11%	6%
1999	11%	8%	16%	6%	7%	4%	8%	20%	15%	18%	5%	7%	11%	17%	10%	66%	36%	12%	4%	36%	5%	9%	14%	244%	12%	5%	21%	5%	10%	6%
2000	12%	9%	16%	6%	7%	4%	8%	20%	15%	19%	5%	7%	11%	19%	9%	66%	36%	12%	4%	36%	5%	9%	14%	227%	12%	5%	21%	6%	11%	7%
2001	13%	9%	17%	6%	8%	4%	8%	22%	15%	19%	6%	8%	12%	29%	10%	66%	38%	13%	5%	36%	6%	10%	15%	221%	12%	6%	21%	6%	12%	6%
2002	16%	9%	17%	7%	10%	5%	9%	23%	15%	19%	7%	10%	16%	29%	9%	67%	40%	14%	6%	36%	6%	10%	15%	211%	15%	6%	22%	6%	14%	6%
2003	18%	9%	19%	8%	12%	6%	10%	24%	16%	21%	8%	12%	25%	42%	10%	65%	41%	16%	8%	37%	7%	11%	16%	215%	18%	7%	23%	7%	15%	7%
2004	18%	10%	19%	9%	12%	6%	10%	25%	17%	22%	9%	12%	29%	36%	11%	65%	42%	17%	8%	37%	6%	11%	17%	187%	20%	9%	23%	8%	17%	8%
2005	18%	10%	20%	9%	13%	6%	11%	24%	17%	23%	10%	13%	30%	39%	11%	63%	41%	18%	8%	38%	6%	12%	18%	180%	21%	10%	23%	8%	18%	9%
2006	21%	11%	22%	11%	17%	8%	12%	26%	18%	26%	11%	16%	35%	53%	13%	66%	45%	20%	10%	39%	7%	13%	20%	157%	26%	11%	24%	10%	24%	9%
2007	15%	9%	20%	8%	12%	5%	9%	24%	16%	24%	8%	11%	26%	44%	10%	60%	38%	16%	7%	37%	5%	11%	18%	127%	20%	9%	23%	8%	18%	9%
2008	15%	9%	21%	10%	13%	6%	10%	24%	17%	25%	11%	12%	31%	61%	12%	63%	41%	18%	8%	39%	6%	11%	19%	105%	24%	9%	23%	9%	23%	11%
2009	4%	6%	13%	1%	0%	0%	3%	14%	12%	14%	0%	1%	2%	8%	3%	44%	24%	5%	1%	32%	1%	4%	14%	90%	6%	3%	20%	2%	5%	9%
2010	4%	6%	14%	1%	0%	0%	3%	14%	13%	15%	0%	1%	2%	8%	3%	46%	24%	5%	1%	33%	1%	4%	14%	82%	6%	3%	20%	2%	5%	10%

Table 37. GDPPC Tax 2005$ U.S. Billions, Nordhaus SCC, 1980-2010.

	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World-44
1980	$ 6.5	$ 5.8	$ 3.9	$ 0.9	$ 6.4	$ 5.4	$ 4.5	$ 5.5	$ 5.4	$ 5.2	$ 5.9	$ 7.1	$ 5.9	$ 9.5	$ 6.6	$ 0.9	$ 5.3	$ 5.6	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.2	$ 3.2	$ 1.6	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.3	$ 4.2	$ 1.3	$ 0.9	$ 1.2	$ 4.1	$ 0.1	$ 1.5	$ 2.8	$ 8.6	$ 2.4	$ 0.8	$ 8.6	$ 1.2	$ 0.9	$ 148.4
1981	$ 6.4	$ 5.7	$ 3.8	$ 0.9	$ 6.3	$ 5.3	$ 4.5	$ 5.4	$ 5.3	$ 5.1	$ 5.8	$ 6.9	$ 5.8	$ 9.4	$ 6.5	$ 0.9	$ 5.2	$ 5.5	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.1	$ 3.2	$ 1.6	$ 0.1	$ 0.2	$ 0.5	$ 0.3	$ 3.2	$ 4.1	$ 1.3	$ 0.9	$ 1.2	$ 4.0	$ 0.1	$ 1.5	$ 2.8	$ 8.4	$ 2.3	$ 0.8	$ 8.4	$ 1.1	$ 0.9	$ 145.7
1982	$ 6.3	$ 5.6	$ 3.7	$ 0.9	$ 6.2	$ 5.2	$ 4.4	$ 5.3	$ 5.2	$ 5.0	$ 5.7	$ 6.8	$ 5.6	$ 9.2	$ 6.4	$ 0.9	$ 5.1	$ 5.4	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.1	$ 3.1	$ 1.6	$ 0.1	$ 0.2	$ 0.5	$ 0.3	$ 3.2	$ 4.1	$ 1.3	$ 0.9	$ 1.1	$ 3.9	$ 0.1	$ 1.4	$ 2.7	$ 8.3	$ 2.3	$ 0.8	$ 8.3	$ 1.1	$ 0.9	$ 142.9
1983	$ 6.3	$ 5.6	$ 3.7	$ 0.9	$ 6.2	$ 5.2	$ 4.4	$ 5.3	$ 5.2	$ 5.0	$ 5.7	$ 6.8	$ 5.7	$ 9.2	$ 6.4	$ 0.9	$ 5.2	$ 5.4	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.1	$ 3.1	$ 1.6	$ 0.1	$ 0.2	$ 0.5	$ 0.3	$ 3.2	$ 4.1	$ 1.3	$ 0.9	$ 1.2	$ 4.0	$ 0.1	$ 1.4	$ 2.7	$ 8.3	$ 2.3	$ 0.8	$ 8.3	$ 1.1	$ 0.9	$ 143.3
1984	$ 6.6	$ 5.9	$ 3.9	$ 1.0	$ 6.5	$ 5.5	$ 4.6	$ 5.6	$ 5.5	$ 5.3	$ 6.0	$ 7.2	$ 6.0	$ 9.7	$ 6.7	$ 0.9	$ 5.4	$ 5.7	$ 0.8	$ 0.4	$ -	$ 0.6	$ 2.2	$ 3.3	$ 1.7	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.3	$ 4.3	$ 1.4	$ 0.9	$ 1.2	$ 4.2	$ 0.1	$ 1.5	$ 2.9	$ 8.7	$ 2.4	$ 0.9	$ 8.7	$ 1.2	$ 0.9	$ 150.7
1985	$ 6.7	$ 6.0	$ 4.0	$ 1.0	$ 6.7	$ 5.6	$ 4.7	$ 5.7	$ 5.6	$ 5.4	$ 6.1	$ 7.3	$ 6.1	$ 9.9	$ 6.9	$ 1.0	$ 5.5	$ 5.8	$ 0.9	$ 0.4	$ -	$ 0.6	$ 2.2	$ 3.4	$ 1.7	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.4	$ 4.4	$ 1.4	$ 1.0	$ 1.2	$ 4.3	$ 0.2	$ 1.5	$ 2.9	$ 8.9	$ 2.5	$ 0.9	$ 8.9	$ 1.2	$ 0.9	$ 154.0
1986	$ 6.8	$ 6.1	$ 4.1	$ 1.0	$ 6.8	$ 5.7	$ 4.8	$ 5.8	$ 5.7	$ 5.5	$ 6.2	$ 7.4	$ 6.2	$ 10.0	$ 7.0	$ 1.0	$ 5.6	$ 5.9	$ 0.9	$ 0.4	$ -	$ 0.6	$ 2.3	$ 3.4	$ 1.7	$ 0.2	$ 0.2	$ 0.5	$ 0.3	$ 3.5	$ 4.4	$ 1.4	$ 1.0	$ 1.3	$ 4.3	$ 0.2	$ 1.6	$ 3.0	$ 9.0	$ 2.5	$ 0.9	$ 9.0	$ 1.2	$ 0.9	$ 156.0
1987	$ 7.1	$ 6.3	$ 4.2	$ 1.0	$ 7.0	$ 5.9	$ 4.9	$ 6.0	$ 5.8	$ 5.6	$ 6.4	$ 7.7	$ 6.4	$ 10.4	$ 7.2	$ 1.0	$ 5.8	$ 6.1	$ 0.9	$ 0.5	$ -	$ 0.6	$ 2.3	$ 3.5	$ 1.8	$ 0.2	$ 0.3	$ 0.5	$ 0.3	$ 3.6	$ 4.6	$ 1.5	$ 1.0	$ 1.3	$ 4.5	$ 0.2	$ 1.6	$ 3.1	$ 9.3	$ 2.6	$ 0.9	$ 9.3	$ 1.3	$ 1.0	$ 161.3
1988	$ 7.3	$ 6.6	$ 4.4	$ 1.1	$ 7.3	$ 6.1	$ 5.1	$ 6.2	$ 6.1	$ 5.9	$ 6.7	$ 8.0	$ 6.6	$ 10.8	$ 7.5	$ 1.0	$ 6.0	$ 6.3	$ 0.9	$ 0.5	$ -	$ 0.7	$ 2.4	$ 3.6	$ 1.8	$ 0.2	$ 0.3	$ 0.5	$ 0.4	$ 3.7	$ 4.8	$ 1.5	$ 1.1	$ 1.3	$ 4.6	$ 0.2	$ 1.7	$ 3.2	$ 9.7	$ 2.7	$ 0.9	$ 9.7	$ 1.3	$ 1.0	$ 167.4
1989	$ 7.5	$ 6.7	$ 4.5	$ 1.1	$ 7.5	$ 6.2	$ 5.3	$ 6.3	$ 6.2	$ 6.0	$ 6.8	$ 8.2	$ 6.8	$ 11.0	$ 7.7	$ 1.1	$ 6.2	$ 6.4	$ 1.0	$ 0.5	$ -	$ 0.7	$ 2.5	$ 3.7	$ 1.9	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 3.8	$ 4.9	$ 1.6	$ 1.1	$ 1.4	$ 4.7	$ 0.2	$ 1.7	$ 3.3	$ 9.9	$ 2.7	$ 1.0	$ 9.9	$ 1.3	$ 1.0	$ 171.6
1990	$ 7.5	$ 6.8	$ 4.5	$ 1.1	$ 7.5	$ 6.2	$ 5.3	$ 6.4	$ 6.2	$ 6.0	$ 6.8	$ 8.2	$ 6.8	$ 11.1	$ 7.7	$ 1.1	$ 6.2	$ 6.5	$ 1.0	$ 0.5	$ -	$ 0.7	$ 2.5	$ 3.8	$ 1.9	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 3.8	$ 4.9	$ 1.6	$ 1.1	$ 1.4	$ 4.8	$ 0.2	$ 1.7	$ 3.3	$ 10.0	$ 2.7	$ 1.0	$ 10.0	$ 1.3	$ 1.0	$ 172.2
1991	$ 8.2	$ 7.3	$ 4.9	$ 1.2	$ 8.1	$ 6.8	$ 5.7	$ 6.9	$ 6.8	$ 6.5	$ 7.4	$ 8.9	$ 7.4	$ 12.0	$ 8.3	$ 1.2	$ 6.7	$ 7.0	$ 1.0	$ 0.5	$ -	$ 0.7	$ 2.7	$ 4.1	$ 2.1	$ 0.2	$ 0.3	$ 0.6	$ 0.4	$ 4.1	$ 5.3	$ 1.7	$ 1.2	$ 1.5	$ 5.2	$ 0.2	$ 1.9	$ 3.6	$ 10.8	$ 3.0	$ 1.1	$ 10.8	$ 1.5	$ 1.1	$ 186.7
1992	$ 9.3	$ 8.4	$ 5.5	$ 1.4	$ 9.2	$ 7.7	$ 6.5	$ 7.9	$ 7.7	$ 7.5	$ 8.5	$ 10.1	$ 8.4	$ 13.7	$ 9.5	$ 1.3	$ 7.7	$ 8.0	$ 1.2	$ 0.6	$ -	$ 0.8	$ 3.1	$ 4.6	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.7	$ 6.1	$ 1.9	$ 1.3	$ 1.7	$ 5.9	$ 0.2	$ 2.1	$ 4.1	$ 12.3	$ 3.4	$ 1.2	$ 12.3	$ 1.7	$ 1.3	$ 212.8
1993	$ 9.5	$ 8.5	$ 5.6	$ 1.4	$ 9.4	$ 7.9	$ 6.6	$ 8.0	$ 7.9	$ 7.6	$ 8.6	$ 10.3	$ 8.6	$ 13.9	$ 9.7	$ 1.4	$ 7.8	$ 8.1	$ 1.2	$ 0.6	$ -	$ 0.8	$ 3.2	$ 4.7	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.8	$ 6.2	$ 2.0	$ 1.4	$ 1.7	$ 6.0	$ 0.2	$ 2.2	$ 4.1	$ 12.6	$ 3.4	$ 1.2	$ 12.5	$ 1.7	$ 1.3	$ 216.6
1994	$ 9.6	$ 8.6	$ 5.7	$ 1.4	$ 9.6	$ 8.0	$ 6.7	$ 8.1	$ 8.0	$ 7.7	$ 8.8	$ 10.5	$ 8.7	$ 14.1	$ 9.8	$ 1.4	$ 7.9	$ 8.3	$ 1.2	$ 0.6	$ -	$ 0.9	$ 3.2	$ 4.8	$ 2.4	$ 0.2	$ 0.3	$ 0.7	$ 0.5	$ 4.9	$ 6.3	$ 2.0	$ 1.4	$ 1.8	$ 6.1	$ 0.2	$ 2.2	$ 4.2	$ 12.8	$ 3.5	$ 1.2	$ 12.7	$ 1.7	$ 1.3	$ 220.1
1995	$ 9.8	$ 8.8	$ 5.8	$ 1.4	$ 9.7	$ 8.1	$ 6.9	$ 8.3	$ 8.1	$ 7.9	$ 8.9	$ 10.7	$ 8.9	$ 14.4	$ 10.0	$ 1.4	$ 8.1	$ 8.4	$ 1.3	$ 0.6	$ -	$ 0.9	$ 3.3	$ 4.9	$ 2.5	$ 0.2	$ 0.4	$ 0.7	$ 0.5	$ 5.0	$ 6.4	$ 2.0	$ 1.4	$ 1.8	$ 6.2	$ 0.2	$ 2.2	$ 4.3	$ 13.0	$ 3.6	$ 1.3	$ 13.0	$ 1.7	$ 1.3	$ 224.2
1996	$ 10.0	$ 9.0	$ 6.0	$ 1.5	$ 10.0	$ 8.3	$ 7.0	$ 8.5	$ 8.3	$ 8.0	$ 9.1	$ 10.9	$ 9.1	$ 14.8	$ 10.3	$ 1.4	$ 8.3	$ 8.6	$ 1.3	$ 0.7	$ -	$ 0.9	$ 3.3	$ 5.0	$ 2.5	$ 0.2	$ 0.4	$ 0.7	$ 0.5	$ 5.1	$ 6.5	$ 2.1	$ 1.4	$ 1.8	$ 6.3	$ 0.2	$ 2.3	$ 4.4	$ 13.3	$ 3.7	$ 1.3	$ 13.3	$ 1.8	$ 1.4	$ 229.7
1997	$ 10.1	$ 9.1	$ 6.0	$ 1.5	$ 10.1	$ 8.4	$ 7.1	$ 8.5	$ 8.4	$ 8.1	$ 9.2	$ 11.0	$ 9.1	$ 14.9	$ 10.3	$ 1.4	$ 8.3	$ 8.7	$ 1.3	$ 0.7	$ -	$ 0.9	$ 3.4	$ 5.0	$ 2.6	$ 0.2	$ 0.4	$ 0.8	$ 0.5	$ 5.1	$ 6.6	$ 2.1	$ 1.5	$ 1.9	$ 6.4	$ 0.2	$ 2.3	$ 4.4	$ 13.4	$ 3.7	$ 1.3	$ 13.4	$ 1.8	$ 1.4	$ 231.4
1998	$ 10.1	$ 9.1	$ 6.0	$ 1.5	$ 10.1	$ 8.4	$ 7.1	$ 8.6	$ 8.4	$ 8.1	$ 9.2	$ 11.0	$ 9.1	$ 14.9	$ 10.3	$ 1.4	$ 8.3	$ 8.7	$ 1.3	$ 0.7	$ -	$ 0.9	$ 3.4	$ 5.0	$ 2.6	$ 0.2	$ 0.4	$ 0.8	$ 0.5	$ 5.1	$ 6.6	$ 2.1	$ 1.5	$ 1.9	$ 6.4	$ 0.2	$ 2.3	$ 4.4	$ 13.4	$ 3.7	$ 1.3	$ 13.4	$ 1.8	$ 1.4	$ 231.4
1999	$ 10.3	$ 9.3	$ 6.1	$ 1.5	$ 10.2	$ 8.5	$ 7.2	$ 8.7	$ 8.5	$ 8.3	$ 9.4	$ 11.2	$ 9.3	$ 15.1	$ 10.5	$ 1.5	$ 8.5	$ 8.8	$ 1.3	$ 0.7	$ -	$ 0.9	$ 3.4	$ 5.1	$ 2.6	$ 0.2	$ 0.4	$ 0.8	$ 0.5	$ 5.2	$ 6.7	$ 2.1	$ 1.5	$ 1.9	$ 6.5	$ 0.2	$ 2.4	$ 4.5	$ 13.7	$ 3.7	$ 1.3	$ 13.6	$ 1.8	$ 1.4	$ 235.6
2000	$ 10.7	$ 9.6	$ 6.4	$ 1.5	$ 10.6	$ 8.8	$ 7.5	$ 9.0	$ 8.8	$ 8.5	$ 9.7	$ 11.6	$ 9.6	$ 15.7	$ 10.9	$ 1.5	$ 8.8	$ 9.2	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.5	$ 5.3	$ 2.7	$ 0.3	$ 0.4	$ 0.8	$ 0.5	$ 5.4	$ 6.9	$ 2.2	$ 1.5	$ 2.0	$ 6.7	$ 0.2	$ 2.4	$ 4.7	$ 14.1	$ 3.9	$ 1.4	$ 14.1	$ 1.9	$ 1.5	$ 243.7
2001	$ 10.7	$ 9.6	$ 6.4	$ 1.5	$ 10.6	$ 8.9	$ 7.5	$ 9.0	$ 8.9	$ 8.5	$ 9.7	$ 11.6	$ 9.6	$ 15.7	$ 10.9	$ 1.5	$ 8.8	$ 9.2	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.6	$ 5.3	$ 2.7	$ 0.3	$ 0.4	$ 0.8	$ 0.5	$ 5.4	$ 6.9	$ 2.2	$ 1.5	$ 2.0	$ 6.7	$ 0.2	$ 2.4	$ 4.7	$ 14.1	$ 3.9	$ 1.4	$ 14.1	$ 1.9	$ 1.5	$ 244.0
2002	$ 10.8	$ 9.7	$ 6.5	$ 1.6	$ 10.8	$ 9.0	$ 7.6	$ 9.2	$ 9.0	$ 8.7	$ 9.9	$ 11.8	$ 9.8	$ 15.9	$ 11.1	$ 1.6	$ 8.9	$ 9.3	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.6	$ 5.4	$ 2.7	$ 0.3	$ 0.4	$ 0.8	$ 0.5	$ 5.5	$ 7.1	$ 2.2	$ 1.6	$ 2.0	$ 6.8	$ 0.2	$ 2.5	$ 4.7	$ 14.4	$ 3.9	$ 1.4	$ 14.3	$ 1.9	$ 1.5	$ 248.1
2003	$ 11.3	$ 10.2	$ 6.8	$ 1.6	$ 11.3	$ 9.4	$ 7.9	$ 9.6	$ 9.4	$ 9.1	$ 10.3	$ 12.3	$ 10.2	$ 16.7	$ 11.6	$ 1.6	$ 9.3	$ 9.7	$ 1.4	$ 0.7	$ -	$ 1.0	$ 3.8	$ 5.6	$ 2.9	$ 0.3	$ 0.4	$ 0.8	$ 0.6	$ 5.7	$ 7.4	$ 2.3	$ 1.6	$ 2.1	$ 7.2	$ 0.3	$ 2.6	$ 5.0	$ 15.0	$ 4.1	$ 1.5	$ 15.0	$ 2.0	$ 1.6	$ 259.4
2004	$ 11.9	$ 10.7	$ 7.1	$ 1.7	$ 11.8	$ 9.9	$ 8.3	$ 10.1	$ 9.9	$ 9.6	$ 10.8	$ 13.0	$ 10.8	$ 17.5	$ 12.2	$ 1.7	$ 9.8	$ 10.2	$ 1.5	$ 0.8	$ -	$ 1.1	$ 4.0	$ 5.9	$ 3.0	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 6.0	$ 7.8	$ 2.5	$ 1.7	$ 2.2	$ 7.5	$ 0.3	$ 2.7	$ 5.2	$ 15.8	$ 4.3	$ 1.5	$ 15.8	$ 2.1	$ 1.6	$ 272.6
2005	$ 12.3	$ 11.1	$ 7.3	$ 1.8	$ 12.2	$ 10.2	$ 8.6	$ 10.4	$ 10.2	$ 9.9	$ 11.2	$ 13.4	$ 11.1	$ 18.1	$ 12.6	$ 1.8	$ 10.1	$ 10.6	$ 1.6	$ 0.8	$ -	$ 1.1	$ 4.1	$ 6.1	$ 3.1	$ 0.3	$ 0.4	$ 0.9	$ 0.6	$ 6.2	$ 8.0	$ 2.5	$ 1.8	$ 2.3	$ 7.8	$ 0.3	$ 2.8	$ 5.4	$ 16.3	$ 4.5	$ 1.6	$ 16.3	$ 2.2	$ 1.7	$ 281.7
2006	$ 12.6	$ 11.4	$ 7.5	$ 1.8	$ 12.6	$ 10.5	$ 8.9	$ 10.7	$ 10.5	$ 10.1	$ 11.5	$ 13.7	$ 11.4	$ 18.6	$ 12.9	$ 1.8	$ 10.4	$ 10.9	$ 1.6	$ 0.8	$ -	$ 1.1	$ 4.2	$ 6.3	$ 3.2	$ 0.3	$ 0.5	$ 0.9	$ 0.6	$ 6.4	$ 8.2	$ 2.6	$ 1.8	$ 2.3	$ 8.0	$ 0.3	$ 2.9	$ 5.5	$ 16.8	$ 4.6	$ 1.6	$ 16.7	$ 2.3	$ 1.7	$ 289.1
2007	$ 12.9	$ 11.6	$ 7.7	$ 1.9	$ 12.9	$ 10.7	$ 9.1	$ 10.9	$ 10.7	$ 10.4	$ 11.8	$ 14.1	$ 11.7	$ 19.0	$ 13.2	$ 1.8	$ 10.6	$ 11.1	$ 1.7	$ 0.8	$ -	$ 1.2	$ 4.3	$ 6.4	$ 3.3	$ 0.3	$ 0.5	$ 1.0	$ 0.6	$ 6.5	$ 8.4	$ 2.7	$ 1.9	$ 2.4	$ 8.2	$ 0.3	$ 3.0	$ 5.7	$ 17.1	$ 4.7	$ 1.7	$ 17.1	$ 2.3	$ 1.8	$ 295.9
2008	$ 13.1	$ 11.7	$ 7.8	$ 1.9	$ 13.0	$ 10.8	$ 9.2	$ 11.0	$ 10.8	$ 10.5	$ 11.9	$ 14.2	$ 11.8	$ 19.2	$ 13.3	$ 1.9	$ 10.8	$ 11.2	$ 1.7	$ 0.9	$ -	$ 1.2	$ 4.4	$ 6.5	$ 3.3	$ 0.3	$ 0.5	$ 1.0	$ 0.6	$ 6.6	$ 8.5	$ 2.7	$ 1.9	$ 2.4	$ 8.2	$ 0.3	$ 3.0	$ 5.7	$ 17.3	$ 4.8	$ 1.7	$ 17.3	$ 2.3	$ 1.8	$ 298.8
2009	$ 13.0	$ 11.7	$ 7.8	$ 1.9	$ 12.9	$ 10.8	$ 9.1	$ 11.0	$ 10.8	$ 10.4	$ 11.8	$ 14.2	$ 11.8	$ 19.1	$ 13.3	$ 1.9	$ 10.7	$ 11.2	$ 1.7	$ 0.9	$ -	$ 1.2	$ 4.3	$ 6.5	$ 3.3	$ 0.3	$ 0.5	$ 1.0	$ 0.6	$ 6.6	$ 8.5	$ 2.7	$ 1.9	$ 2.4	$ 8.2	$ 0.3	$ 3.0	$ 5.7	$ 17.3	$ 4.7	$ 1.7	$ 17.2	$ 2.3	$ 1.8	$ 297.8
2010	$ 13.7	$ 12.3	$ 8.2	$ 2.0	$ 13.7	$ 11.4	$ 9.6	$ 11.6	$ 11.4	$ 11.0	$ 12.5	$ 14.9	$ 12.4	$ 20.2	$ 14.0	$ 2.0	$ 11.3	$ 11.8	$ 1.8	$ 0.9	$ -	$ 1.2	$ 4.6	$ 6.8	$ 3.5	$ 0.3	$ 0.5	$ 1.0	$ 0.7	$ 7.0	$ 8.9	$ 2.8	$ 2.0	$ 2.5	$ 8.7	$ 0.3	$ 3.1	$ 6.0	$ 18.2	$ 5.0	$ 1.8	$ 18.2	$ 2.4	$ 1.9	$ 314.3

Table 38. GDPPC Tax $fGDP_{e+CO2}$, Nordhaus SCC, 1980-2010.

	United Sta	United Kir	Spain	Russia	Netherlar	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea	Kuwait	Libya	Malaysia	Mexico	New Zeala	Nigeria	Poland	Portugal	Qatar	Saudi Aral	Soth Afric	Switzerlar	Turkey	Venezuela	World-44
1980	9%	6%	6%	26%	10%	6%	5%	11%	10%	6%	9%	9%	11%	11%	10%	13%	8%	9%	7%	30%	10%	9%	11%	7%	11%	10%	11%	16%	5%	11%	27%	9%	15%	6%	12%	8%	15%	8%	51%	10%	5%	7%	6%	12%	11%
1981	8%	5%	5%	20%	9%	5%	4%	9%	9%	5%	8%	8%	10%	10%	8%	12%	7%	8%	7%	25%	9%	7%	10%	6%	9%	9%	9%	13%	4%	9%	26%	10%	14%	5%	12%	8%	13%	7%	52%	10%	5%	7%	5%	11%	10%
1982	7%	5%	5%	20%	8%	5%	4%	9%	9%	5%	8%	7%	10%	10%	8%	11%	6%	8%	6%	21%	8%	7%	9%	6%	9%	9%	8%	15%	4%	9%	26%	10%	13%	5%	11%	7%	12%	7%	56%	9%	4%	7%	5%	10%	9%
1983	7%	5%	4%	20%	8%	4%	4%	8%	8%	5%	7%	7%	10%	10%	8%	11%	6%	8%	6%	18%	7%	7%	9%	6%	9%	9%	8%	14%	4%	8%	26%	10%	12%	5%	10%	6%	11%	6%	59%	9%	4%	6%	5%	10%	8%
1984	5%	4%	3%	14%	6%	4%	3%	9%	6%	4%	7%	7%	9%	10%	7%	8%	4%	7%	5%	14%	4%	6%	8%	4%	7%	6%	5%	9%	3%	6%	19%	7%	9%	3%	9%	4%	11%	6%	54%	5%	3%	6%	3%	6%	8%
1985	5%	4%	4%	15%	6%	4%	3%	10%	7%	5%	7%	7%	9%	10%	8%	9%	4%	7%	5%	15%	4%	6%	9%	5%	8%	7%	6%	11%	4%	7%	23%	10%	9%	3%	10%	4%	13%	6%	63%	6%	3%	7%	4%	8%	7%
1986	4%	4%	4%	14%	5%	4%	3%	9%	6%	4%	7%	6%	9%	10%	8%	8%	4%	7%	6%	13%	4%	6%	8%	5%	7%	6%	5%	10%	4%	6%	22%	7%	9%	3%	10%	3%	12%	6%	61%	5%	3%	6%	3%	6%	6%
1987	4%	4%	4%	15%	5%	3%	3%	8%	7%	4%	7%	6%	8%	9%	7%	9%	4%	6%	6%	13%	5%	6%	7%	5%	7%	6%	5%	12%	4%	6%	23%	9%	9%	4%	10%	4%	10%	5%	63%	6%	3%	6%	4%	7%	6%
1988	4%	4%	4%	13%	6%	4%	3%	8%	7%	4%	7%	7%	9%	10%	8%	10%	5%	7%	7%	17%	6%	6%	7%	6%	7%	8%	7%	13%	8%	7%	19%	9%	10%	4%	11%	5%	9%	5%	62%	6%	4%	7%	4%	8%	6%
1989	4%	4%	4%	13%	6%	3%	3%	6%	7%	4%	7%	7%	8%	10%	9%	8%	5%	7%	6%	12%	5%	6%	7%	5%	7%	8%	5%	11%	11%	6%	13%	8%	9%	4%	11%	4%	10%	5%	61%	6%	4%	7%	4%	6%	5%
1990	4%	4%	4%	13%	6%	3%	3%	6%	7%	4%	7%	6%	10%	11%	8%	8%	4%	7%	6%	18%	5%	5%	7%	5%	7%	7%	5%	10%	14%	6%	16%	8%	8%	3%	11%	4%	10%	5%	70%	6%	4%	7%	4%	7%	6%
1991	4%	3%	3%	9%	6%	4%	3%	6%	6%	4%	7%	6%	10%	11%	7%	7%	4%	6%	5%	16%	5%	6%	7%	5%	7%	6%	5%	9%	21%	6%	27%	7%	7%	3%	11%	3%	10%	5%	76%	5%	3%	7%	4%	5%	5%
1992	3%	3%	3%	10%	6%	4%	3%	5%	6%	4%	7%	7%	11%	11%	7%	7%	4%	6%	6%	8%	4%	5%	8%	5%	8%	6%	4%	9%	21%	6%	22%	9%	7%	3%	12%	3%	9%	5%	82%	5%	3%	7%	3%	6%	5%
1993	3%	3%	3%	13%	6%	4%	3%	6%	6%	4%	7%	7%	11%	11%	8%	8%	4%	7%	5%	8%	4%	5%	8%	5%	8%	6%	5%	10%	23%	6%	18%	10%	7%	3%	12%	3%	10%	5%	84%	6%	3%	8%	4%	7%	5%
1994	4%	3%	4%	9%	6%	4%	3%	4%	6%	4%	7%	8%	11%	11%	8%	8%	4%	7%	5%	8%	4%	5%	8%	6%	8%	6%	5%	11%	26%	7%	18%	11%	8%	3%	12%	3%	9%	6%	85%	6%	3%	8%	4%	7%	5%
1995	3%	3%	3%	7%	5%	4%	3%	4%	6%	4%	7%	7%	10%	10%	7%	8%	4%	6%	5%	8%	4%	5%	8%	6%	8%	6%	5%	9%	23%	7%	17%	11%	7%	3%	12%	3%	8%	5%	81%	5%	3%	7%	4%	5%	5%
1996	3%	3%	3%	6%	4%	3%	2%	3%	5%	3%	7%	7%	10%	10%	8%	6%	3%	6%	5%	7%	3%	4%	7%	5%	7%	5%	3%	6%	10%	5%	15%	10%	5%	2%	11%	2%	6%	5%	77%	4%	3%	7%	3%	4%	5%
1997	3%	3%	3%	7%	4%	4%	3%	3%	5%	3%	6%	6%	10%	10%	7%	7%	3%	6%	5%	6%	3%	5%	7%	5%	7%	5%	5%	8%	8%	6%	18%	11%	6%	3%	11%	3%	6%	5%	61%	5%	3%	7%	3%	5%	4%
1998	4%	3%	3%	7%	5%	4%	3%	3%	6%	3%	6%	7%	8%	8%	7%	9%	4%	6%	6%	8%	5%	5%	8%	6%	8%	7%	7%	11%	14%	8%	20%	14%	8%	4%	11%	5%	6%	5%	56%	7%	3%	7%	4%	7%	4%
1999	3%	2%	3%	7%	5%	4%	3%	3%	5%	3%	6%	7%	8%	8%	7%	8%	4%	6%	5%	6%	4%	5%	8%	5%	7%	5%	7%	9%	13%	7%	19%	13%	7%	3%	10%	4%	5%	5%	54%	6%	3%	7%	3%	6%	4%
2000	3%	2%	3%	6%	5%	3%	3%	3%	5%	3%	6%	7%	8%	8%	7%	8%	4%	7%	5%	6%	4%	5%	8%	5%	8%	5%	7%	9%	14%	6%	20%	14%	7%	3%	10%	4%	6%	5%	51%	7%	3%	7%	4%	7%	4%
2001	4%	3%	4%	7%	6%	3%	3%	4%	6%	4%	7%	7%	9%	9%	8%	10%	4%	7%	6%	7%	4%	5%	10%	5%	8%	6%	8%	10%	25%	7%	20%	14%	8%	4%	11%	5%	6%	6%	49%	7%	3%	7%	4%	8%	4%
2002	4%	3%	4%	9%	6%	4%	4%	4%	7%	4%	8%	8%	9%	9%	8%	12%	4%	8%	6%	10%	5%	6%	12%	6%	9%	7%	9%	14%	24%	6%	22%	17%	9%	5%	12%	5%	7%	6%	48%	9%	4%	7%	4%	9%	4%
2003	5%	3%	5%	12%	7%	4%	4%	5%	8%	4%	8%	8%	10%	10%	8%	14%	5%	9%	8%	12%	6%	7%	13%	7%	11%	8%	12%	23%	33%	7%	24%	19%	11%	7%	12%	7%	8%	7%	50%	12%	5%	8%	5%	10%	5%
2004	5%	4%	5%	13%	8%	4%	5%	5%	8%	5%	9%	9%	11%	10%	9%	14%	5%	9%	8%	12%	6%	7%	13%	8%	12%	9%	12%	27%	29%	8%	26%	20%	12%	7%	12%	5%	8%	7%	45%	14%	6%	8%	6%	13%	5%
2005	5%	4%	6%	13%	8%	4%	5%	5%	8%	5%	9%	9%	10%	10%	8%	15%	5%	10%	9%	13%	6%	8%	13%	8%	12%	9%	12%	28%	32%	9%	27%	20%	13%	7%	13%	5%	8%	8%	43%	16%	7%	8%	7%	14%	6%
2006	7%	5%	7%	17%	10%	5%	6%	7%	10%	6%	10%	10%	12%	11%	9%	17%	6%	12%	10%	17%	8%	9%	15%	9%	16%	11%	15%	34%	47%	10%	31%	24%	16%	9%	14%	6%	10%	9%	39%	21%	9%	8%	8%	20%	7%
2007	4%	4%	5%	13%	8%	5%	5%	6%	7%	5%	9%	9%	10%	10%	8%	12%	4%	10%	8%	12%	5%	7%	13%	7%	13%	8%	10%	24%	37%	7%	25%	19%	12%	6%	12%	4%	8%	8%	31%	15%	7%	8%	7%	14%	7%
2008	5%	4%	6%	15%	8%	5%	6%	6%	8%	6%	9%	9%	11%	12%	9%	12%	5%	11%	9%	13%	6%	7%	13%	8%	14%	11%	12%	29%	55%	9%	30%	22%	14%	7%	13%	5%	8%	9%	28%	19%	7%	8%	7%	20%	9%
2009	0%	1%	1%	0%	2%	0%	1%	0%	1%	0%	4%	6%	6%	6%	4%	1%	1%	3%	0%	0%	0%	1%	3%	3%	3%	0%	0%	0%	2%	1%	10%	5%	1%	0%	7%	0%	1%	3%	20%	1%	1%	4%	0%	1%	7%
2010	0%	1%	1%	0%	2%	0%	1%	0%	1%	0%	4%	6%	6%	6%	4%	1%	1%	3%	0%	0%	0%	1%	3%	3%	3%	0%	0%	0%	2%	1%	10%	5%	1%	0%	7%	0%	1%	3%	18%	1%	1%	4%	0%	1%	7%

Table 39. GDPPC Tax 2005$ U.S. Billions, Stern SCC, 1980-2010.

	United State	United King	Spain	Russia	Netherlands	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	$ 70.8	$ 63.5	$ 42.2	$ 10.3	$ 70.3	$ 58.7	$ 49.6	$ 59.8	$ 58.7	$ 56.7	$ 64.3	$ 76.9	$ 63.9	$ 104.0	$ 72.2
1981	$ 69.4	$ 62.4	$ 41.4	$ 10.1	$ 69.0	$ 57.6	$ 48.6	$ 58.7	$ 57.6	$ 55.6	$ 63.1	$ 75.5	$ 62.7	$ 102.0	$ 70.9
1982	$ 68.1	$ 61.2	$ 40.6	$ 9.9	$ 67.7	$ 56.5	$ 47.7	$ 57.6	$ 56.5	$ 54.6	$ 62.0	$ 74.1	$ 61.5	$ 100.1	$ 69.6
1983	$ 68.3	$ 61.3	$ 40.7	$ 9.9	$ 67.9	$ 56.7	$ 47.9	$ 57.7	$ 56.7	$ 54.7	$ 62.1	$ 74.3	$ 61.7	$ 100.4	$ 69.8
1984	$ 71.9	$ 64.5	$ 42.8	$ 10.4	$ 71.4	$ 59.6	$ 50.3	$ 60.7	$ 59.6	$ 57.6	$ 65.3	$ 78.1	$ 64.9	$ 105.6	$ 73.4
1985	$ 73.4	$ 65.9	$ 43.7	$ 10.7	$ 73.0	$ 60.9	$ 51.4	$ 62.0	$ 60.9	$ 58.8	$ 66.8	$ 79.8	$ 66.3	$ 107.9	$ 75.0
1986	$ 74.4	$ 66.8	$ 44.3	$ 10.8	$ 73.9	$ 61.7	$ 52.1	$ 62.8	$ 61.7	$ 59.6	$ 67.6	$ 80.9	$ 67.2	$ 109.3	$ 75.9
1987	$ 76.9	$ 69.0	$ 45.8	$ 11.2	$ 76.4	$ 63.8	$ 53.8	$ 65.0	$ 63.8	$ 61.6	$ 69.9	$ 83.6	$ 69.4	$ 113.0	$ 78.5
1988	$ 79.8	$ 71.6	$ 47.5	$ 11.6	$ 79.3	$ 66.2	$ 55.9	$ 67.4	$ 66.2	$ 63.9	$ 72.5	$ 86.7	$ 72.0	$ 117.2	$ 81.5
1989	$ 81.8	$ 73.5	$ 48.8	$ 11.9	$ 81.3	$ 67.9	$ 57.3	$ 69.1	$ 67.9	$ 65.6	$ 74.4	$ 89.0	$ 73.9	$ 120.2	$ 83.5
1990	$ 82.1	$ 73.7	$ 48.9	$ 11.9	$ 81.6	$ 68.1	$ 57.5	$ 69.4	$ 68.1	$ 65.8	$ 74.6	$ 89.3	$ 74.1	$ 120.6	$ 83.8
1991	$ 89.0	$ 79.9	$ 53.0	$ 12.9	$ 88.4	$ 73.8	$ 62.3	$ 75.2	$ 73.8	$ 71.3	$ 80.9	$ 96.7	$ 80.4	$ 130.7	$ 90.8
1992	$ 101.4	$ 91.1	$ 60.4	$ 14.7	$ 100.8	$ 84.2	$ 71.0	$ 85.7	$ 84.1	$ 81.3	$ 92.2	$ 110.3	$ 91.6	$ 149.0	$ 103.5
1993	$ 103.3	$ 92.7	$ 61.5	$ 15.0	$ 102.6	$ 85.7	$ 72.3	$ 87.2	$ 85.7	$ 82.7	$ 93.9	$ 112.3	$ 93.2	$ 151.7	$ 105.4
1994	$ 104.9	$ 94.2	$ 62.5	$ 15.2	$ 104.2	$ 87.0	$ 73.5	$ 88.7	$ 87.0	$ 84.0	$ 95.4	$ 114.1	$ 94.7	$ 154.2	$ 107.1
1995	$ 106.9	$ 96.0	$ 63.7	$ 15.5	$ 106.2	$ 88.7	$ 74.9	$ 90.3	$ 88.7	$ 85.6	$ 97.2	$ 116.2	$ 96.5	$ 157.1	$ 109.1
1996	$ 109.5	$ 98.3	$ 65.2	$ 15.9	$ 108.8	$ 90.9	$ 76.7	$ 92.5	$ 90.8	$ 87.7	$ 99.6	$ 119.1	$ 98.9	$ 160.9	$ 111.8
1997	$ 110.3	$ 99.0	$ 65.7	$ 16.0	$ 109.6	$ 91.5	$ 77.2	$ 93.2	$ 91.5	$ 88.4	$ 100.3	$ 119.9	$ 99.6	$ 162.1	$ 112.6
1998	$ 110.3	$ 99.1	$ 65.7	$ 16.0	$ 109.6	$ 91.5	$ 77.3	$ 93.2	$ 91.5	$ 88.4	$ 100.3	$ 120.0	$ 99.6	$ 162.1	$ 112.6
1999	$ 112.3	$ 100.9	$ 66.9	$ 16.3	$ 111.6	$ 93.2	$ 78.7	$ 94.9	$ 93.2	$ 90.0	$ 102.1	$ 122.1	$ 101.4	$ 165.0	$ 114.7
2000	$ 116.2	$ 104.3	$ 69.2	$ 16.9	$ 115.4	$ 96.4	$ 81.4	$ 98.2	$ 96.4	$ 93.1	$ 105.7	$ 126.3	$ 104.9	$ 170.7	$ 118.6
2001	$ 116.3	$ 104.4	$ 69.3	$ 16.9	$ 115.6	$ 96.5	$ 81.5	$ 98.3	$ 96.5	$ 93.2	$ 105.8	$ 126.5	$ 105.0	$ 170.9	$ 118.7
2002	$ 118.3	$ 106.2	$ 70.5	$ 17.2	$ 117.5	$ 98.1	$ 82.8	$ 99.9	$ 98.1	$ 94.7	$ 107.5	$ 128.6	$ 106.8	$ 173.8	$ 120.7
2003	$ 123.6	$ 111.0	$ 73.7	$ 18.0	$ 122.8	$ 102.6	$ 86.6	$ 104.5	$ 102.6	$ 99.0	$ 112.4	$ 134.4	$ 111.7	$ 181.7	$ 126.2
2004	$ 130.0	$ 116.7	$ 77.4	$ 18.9	$ 129.1	$ 107.8	$ 91.0	$ 109.8	$ 107.8	$ 104.1	$ 118.2	$ 141.3	$ 117.4	$ 191.0	$ 132.7
2005	$ 134.3	$ 120.6	$ 80.0	$ 19.5	$ 133.4	$ 111.4	$ 94.1	$ 113.5	$ 111.4	$ 107.6	$ 122.1	$ 146.0	$ 121.3	$ 197.3	$ 137.1
2006	$ 137.8	$ 123.7	$ 82.1	$ 20.0	$ 136.9	$ 114.3	$ 96.5	$ 116.5	$ 114.3	$ 110.4	$ 125.3	$ 149.8	$ 124.5	$ 202.5	$ 140.7
2007	$ 141.1	$ 126.6	$ 84.0	$ 20.5	$ 140.1	$ 117.0	$ 98.8	$ 119.2	$ 117.0	$ 113.0	$ 128.3	$ 153.3	$ 127.4	$ 207.2	$ 144.0
2008	$ 142.5	$ 127.9	$ 84.9	$ 20.7	$ 141.5	$ 118.2	$ 99.8	$ 120.4	$ 118.2	$ 114.1	$ 129.5	$ 154.9	$ 128.7	$ 209.3	$ 145.4
2009	$ 142.0	$ 127.5	$ 84.6	$ 20.6	$ 141.1	$ 117.8	$ 99.4	$ 120.0	$ 117.8	$ 113.7	$ 129.1	$ 154.4	$ 128.2	$ 208.6	$ 144.9
2010	$ 149.8	$ 134.5	$ 89.3	$ 21.8	$ 148.9	$ 124.3	$ 104.9	$ 126.6	$ 124.3	$ 120.0	$ 136.2	$ 162.9	$ 135.3	$ 220.1	$ 153.0

	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea
1980	$ 10.1	$ 58.2	$ 60.8	$ 9.0	$ 4.6	$ -	$ 6.3	$ 23.6	$ 35.2	$ 17.9	$ 1.7	$ 2.5	$ 5.2	$ 3.5	$ 35.8
1981	$ 9.9	$ 57.1	$ 59.6	$ 8.9	$ 4.5	$ -	$ 6.2	$ 23.1	$ 34.6	$ 17.5	$ 1.6	$ 2.5	$ 5.1	$ 3.4	$ 35.1
1982	$ 9.7	$ 56.1	$ 58.5	$ 8.7	$ 4.4	$ -	$ 6.1	$ 22.7	$ 33.9	$ 17.2	$ 1.6	$ 2.4	$ 5.1	$ 3.3	$ 34.5
1983	$ 9.8	$ 56.2	$ 58.7	$ 8.7	$ 4.5	$ -	$ 6.1	$ 22.8	$ 34.0	$ 17.3	$ 1.6	$ 2.4	$ 5.1	$ 3.3	$ 34.6
1984	$ 10.3	$ 59.1	$ 61.7	$ 9.2	$ 4.7	$ -	$ 6.4	$ 23.9	$ 35.8	$ 18.2	$ 1.7	$ 2.6	$ 5.3	$ 3.5	$ 36.3
1985	$ 10.5	$ 60.4	$ 63.0	$ 9.4	$ 4.8	$ -	$ 6.6	$ 24.5	$ 36.6	$ 18.6	$ 1.7	$ 2.6	$ 5.4	$ 3.6	$ 37.1
1986	$ 10.6	$ 61.2	$ 63.9	$ 9.5	$ 4.9	$ -	$ 6.7	$ 24.8	$ 37.0	$ 18.8	$ 1.7	$ 2.7	$ 5.5	$ 3.6	$ 37.6
1987	$ 11.0	$ 63.3	$ 66.0	$ 9.8	$ 5.0	$ -	$ 6.9	$ 25.6	$ 38.3	$ 19.4	$ 1.8	$ 2.7	$ 5.7	$ 3.8	$ 38.9
1988	$ 11.4	$ 65.7	$ 68.5	$ 10.2	$ 5.2	$ -	$ 7.1	$ 26.6	$ 39.7	$ 20.2	$ 1.9	$ 2.8	$ 5.9	$ 3.9	$ 40.4
1989	$ 11.7	$ 67.3	$ 70.3	$ 10.5	$ 5.3	$ -	$ 7.3	$ 27.3	$ 40.8	$ 20.7	$ 1.9	$ 2.9	$ 6.1	$ 4.0	$ 41.4
1990	$ 11.7	$ 67.6	$ 70.5	$ 10.5	$ 5.4	$ -	$ 7.4	$ 27.3	$ 40.9	$ 20.7	$ 1.9	$ 2.9	$ 6.1	$ 4.0	$ 41.5
1991	$ 12.7	$ 73.2	$ 76.4	$ 11.4	$ 5.8	$ -	$ 8.0	$ 29.6	$ 44.3	$ 22.5	$ 2.1	$ 3.2	$ 6.6	$ 4.3	$ 45.0
1992	$ 14.5	$ 83.5	$ 87.1	$ 13.0	$ 6.6	$ -	$ 9.1	$ 33.8	$ 50.5	$ 25.6	$ 2.4	$ 3.6	$ 7.5	$ 4.9	$ 51.3
1993	$ 14.8	$ 85.0	$ 88.7	$ 13.2	$ 6.7	$ -	$ 9.2	$ 34.4	$ 51.4	$ 26.1	$ 2.4	$ 3.7	$ 7.7	$ 5.0	$ 52.2
1994	$ 15.0	$ 86.3	$ 90.1	$ 13.4	$ 6.8	$ -	$ 9.4	$ 34.9	$ 52.3	$ 26.5	$ 2.5	$ 3.7	$ 7.8	$ 5.1	$ 53.1
1995	$ 15.3	$ 88.0	$ 91.8	$ 13.7	$ 7.0	$ -	$ 9.6	$ 35.6	$ 53.2	$ 27.0	$ 2.5	$ 3.8	$ 7.9	$ 5.2	$ 54.1
1996	$ 15.7	$ 90.1	$ 94.0	$ 14.0	$ 7.1	$ -	$ 9.8	$ 36.5	$ 54.5	$ 27.7	$ 2.6	$ 3.9	$ 8.1	$ 5.3	$ 55.4
1997	$ 15.8	$ 90.8	$ 94.7	$ 14.1	$ 7.2	$ -	$ 9.9	$ 36.7	$ 54.9	$ 27.9	$ 2.6	$ 3.9	$ 8.2	$ 5.4	$ 55.8
1998	$ 15.8	$ 90.8	$ 94.7	$ 14.1	$ 7.2	$ -	$ 9.9	$ 36.7	$ 55.0	$ 27.9	$ 2.6	$ 3.9	$ 8.2	$ 5.4	$ 55.8
1999	$ 16.1	$ 92.4	$ 96.4	$ 14.4	$ 7.3	$ -	$ 10.1	$ 37.4	$ 55.9	$ 28.4	$ 2.6	$ 4.0	$ 8.3	$ 5.5	$ 56.8
2000	$ 16.6	$ 95.6	$ 99.8	$ 14.9	$ 7.6	$ -	$ 10.4	$ 38.7	$ 57.9	$ 29.4	$ 2.7	$ 4.2	$ 8.6	$ 5.7	$ 58.8
2001	$ 16.6	$ 95.7	$ 99.9	$ 14.9	$ 7.6	$ -	$ 10.4	$ 38.7	$ 57.9	$ 29.4	$ 2.7	$ 4.2	$ 8.6	$ 5.7	$ 58.8
2002	$ 16.9	$ 97.3	$ 101.5	$ 15.1	$ 7.7	$ -	$ 10.6	$ 39.4	$ 58.9	$ 29.9	$ 2.8	$ 4.2	$ 8.8	$ 5.8	$ 59.8
2003	$ 17.7	$ 101.7	$ 106.2	$ 15.8	$ 8.1	$ -	$ 11.1	$ 41.2	$ 61.6	$ 31.2	$ 2.9	$ 4.4	$ 9.2	$ 6.0	$ 62.5
2004	$ 18.6	$ 107.0	$ 111.6	$ 16.6	$ 8.5	$ -	$ 11.6	$ 43.3	$ 64.7	$ 32.8	$ 3.1	$ 4.6	$ 9.6	$ 6.3	$ 65.7
2005	$ 19.2	$ 110.5	$ 115.3	$ 17.2	$ 8.8	$ -	$ 12.0	$ 44.7	$ 66.9	$ 33.9	$ 3.2	$ 4.8	$ 10.0	$ 6.6	$ 67.9
2006	$ 19.7	$ 113.4	$ 118.3	$ 17.6	$ 9.0	$ -	$ 12.3	$ 45.9	$ 68.6	$ 34.8	$ 3.2	$ 4.9	$ 10.2	$ 6.7	$ 69.7
2007	$ 20.2	$ 116.1	$ 121.1	$ 18.0	$ 9.2	$ -	$ 12.6	$ 47.0	$ 70.2	$ 35.6	$ 3.3	$ 5.0	$ 10.5	$ 6.9	$ 71.3
2008	$ 20.4	$ 117.2	$ 122.3	$ 18.2	$ 9.3	$ -	$ 12.8	$ 47.4	$ 71.0	$ 36.0	$ 3.3	$ 5.1	$ 10.6	$ 7.0	$ 72.1
2009	$ 20.3	$ 116.8	$ 121.9	$ 18.1	$ 9.3	$ -	$ 12.7	$ 47.3	$ 70.7	$ 35.9	$ 3.3	$ 5.1	$ 10.5	$ 6.9	$ 71.8
2010	$ 21.4	$ 123.3	$ 128.6	$ 19.1	$ 9.8	$ -	$ 13.4	$ 49.9	$ 74.6	$ 37.9	$ 3.5	$ 5.4	$ 11.1	$ 7.3	$ 75.8

	Kuwait	Libya	Malaysia	Mexico	New Zealan	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerland	Turkey	Venezuela	World-44
1980	$ 46.1	$ 14.6	$ 10.2	$ 13.0	$ 44.7	$ 1.6	$ 16.2	$ 31.0	$ 93.8	$ 25.7	$ 9.2	$ 93.6	$ 12.6	$ 9.7	$ 1,618.1
1981	$ 45.2	$ 14.4	$ 10.0	$ 12.8	$ 43.8	$ 1.6	$ 15.9	$ 30.4	$ 92.0	$ 25.3	$ 9.0	$ 91.8	$ 12.4	$ 9.5	$ 1,588.0
1982	$ 44.4	$ 14.1	$ 9.8	$ 12.5	$ 43.0	$ 1.5	$ 15.6	$ 29.8	$ 90.3	$ 24.8	$ 8.8	$ 90.1	$ 12.1	$ 9.3	$ 1,558.3
1983	$ 44.5	$ 14.1	$ 9.8	$ 12.6	$ 43.1	$ 1.5	$ 15.6	$ 29.9	$ 90.5	$ 24.9	$ 8.9	$ 90.4	$ 12.2	$ 9.3	$ 1,562.4
1984	$ 46.8	$ 14.9	$ 10.3	$ 13.2	$ 45.3	$ 1.6	$ 16.4	$ 31.4	$ 95.2	$ 26.1	$ 9.3	$ 95.0	$ 12.8	$ 9.8	$ 1,643.1
1985	$ 47.8	$ 15.2	$ 10.6	$ 13.5	$ 46.3	$ 1.7	$ 16.8	$ 32.1	$ 97.3	$ 26.7	$ 9.5	$ 97.1	$ 13.1	$ 10.0	$ 1,679.2
1986	$ 48.4	$ 15.4	$ 10.7	$ 13.7	$ 46.9	$ 1.7	$ 17.0	$ 32.6	$ 98.6	$ 27.1	$ 9.6	$ 98.4	$ 13.3	$ 10.2	$ 1,700.8
1987	$ 50.0	$ 15.9	$ 11.1	$ 14.1	$ 48.5	$ 1.7	$ 17.6	$ 33.6	$ 101.9	$ 28.0	$ 10.0	$ 101.7	$ 13.7	$ 10.5	$ 1,758.0
1988	$ 51.9	$ 16.5	$ 11.5	$ 14.7	$ 50.4	$ 1.8	$ 18.2	$ 34.9	$ 105.7	$ 29.0	$ 10.3	$ 105.5	$ 14.2	$ 10.9	$ 1,824.5
1989	$ 53.3	$ 16.9	$ 11.8	$ 15.0	$ 51.6	$ 1.9	$ 18.7	$ 35.8	$ 108.4	$ 29.8	$ 10.6	$ 108.2	$ 14.6	$ 11.2	$ 1,871.3
1990	$ 53.4	$ 17.0	$ 11.8	$ 15.1	$ 51.8	$ 1.9	$ 18.7	$ 35.9	$ 108.8	$ 29.9	$ 10.6	$ 108.6	$ 14.6	$ 11.2	$ 1,877.4
1991	$ 57.9	$ 18.4	$ 12.8	$ 16.4	$ 56.2	$ 2.0	$ 20.3	$ 38.9	$ 117.9	$ 32.4	$ 11.5	$ 117.7	$ 15.9	$ 12.2	$ 2,034.9
1992	$ 66.0	$ 21.0	$ 14.6	$ 18.7	$ 64.0	$ 2.3	$ 23.2	$ 44.4	$ 134.4	$ 36.9	$ 13.1	$ 134.1	$ 18.1	$ 13.9	$ 2,319.5
1993	$ 67.2	$ 21.4	$ 14.8	$ 19.0	$ 65.2	$ 2.3	$ 23.6	$ 45.2	$ 136.8	$ 37.6	$ 13.4	$ 136.6	$ 18.4	$ 14.1	$ 2,361.2
1994	$ 68.3	$ 21.7	$ 15.1	$ 19.3	$ 66.2	$ 2.4	$ 24.0	$ 45.9	$ 139.0	$ 38.2	$ 13.6	$ 138.8	$ 18.7	$ 14.3	$ 2,399.3
1995	$ 69.6	$ 22.1	$ 15.4	$ 19.7	$ 67.5	$ 2.4	$ 24.4	$ 46.8	$ 141.7	$ 38.9	$ 13.8	$ 141.4	$ 19.0	$ 14.6	$ 2,444.4
1996	$ 71.3	$ 22.7	$ 15.7	$ 20.1	$ 69.1	$ 2.5	$ 25.0	$ 47.9	$ 145.1	$ 39.8	$ 14.2	$ 144.8	$ 19.5	$ 15.0	$ 2,504.4
1997	$ 71.8	$ 22.8	$ 15.9	$ 20.3	$ 69.6	$ 2.5	$ 25.2	$ 48.3	$ 146.2	$ 40.1	$ 14.3	$ 145.9	$ 19.7	$ 15.1	$ 2,522.2
1998	$ 71.8	$ 22.8	$ 15.9	$ 20.3	$ 69.6	$ 2.5	$ 25.2	$ 48.3	$ 146.2	$ 40.1	$ 14.3	$ 145.9	$ 19.7	$ 15.1	$ 2,523.2
1999	$ 73.1	$ 23.2	$ 16.1	$ 20.7	$ 70.9	$ 2.5	$ 25.6	$ 49.2	$ 148.8	$ 40.9	$ 14.5	$ 148.5	$ 20.0	$ 15.4	$ 2,568.5
2000	$ 75.6	$ 24.1	$ 16.7	$ 21.4	$ 73.3	$ 2.6	$ 26.5	$ 50.9	$ 154.0	$ 42.3	$ 15.1	$ 153.7	$ 20.7	$ 15.9	$ 2,657.2
2001	$ 75.7	$ 24.1	$ 16.7	$ 21.4	$ 73.4	$ 2.6	$ 26.6	$ 50.9	$ 154.1	$ 42.3	$ 15.1	$ 153.8	$ 20.7	$ 15.9	$ 2,659.9
2002	$ 77.0	$ 24.5	$ 17.0	$ 21.8	$ 74.6	$ 2.7	$ 27.0	$ 51.8	$ 156.7	$ 43.0	$ 15.3	$ 156.4	$ 21.1	$ 16.2	$ 2,704.6
2003	$ 80.5	$ 25.6	$ 17.8	$ 22.7	$ 78.0	$ 2.8	$ 28.2	$ 54.1	$ 163.9	$ 45.0	$ 16.0	$ 163.5	$ 22.0	$ 16.9	$ 2,827.4
2004	$ 84.6	$ 26.9	$ 18.7	$ 23.9	$ 82.0	$ 2.9	$ 29.7	$ 56.9	$ 172.3	$ 47.3	$ 16.8	$ 171.9	$ 23.2	$ 17.8	$ 2,972.3
2005	$ 87.4	$ 27.8	$ 19.3	$ 24.7	$ 84.7	$ 3.0	$ 30.7	$ 58.8	$ 178.0	$ 48.9	$ 17.4	$ 177.6	$ 23.9	$ 18.4	$ 3,071.0
2006	$ 89.7	$ 28.5	$ 19.8	$ 25.3	$ 87.0	$ 3.1	$ 31.5	$ 60.3	$ 182.6	$ 50.1	$ 17.9	$ 182.3	$ 24.6	$ 18.8	$ 3,151.7
2007	$ 91.8	$ 29.2	$ 20.3	$ 25.9	$ 89.0	$ 3.2	$ 32.2	$ 61.7	$ 186.9	$ 51.3	$ 18.3	$ 186.5	$ 25.1	$ 19.3	$ 3,225.5
2008	$ 92.7	$ 29.5	$ 20.5	$ 26.2	$ 89.9	$ 3.2	$ 32.5	$ 62.4	$ 188.8	$ 51.8	$ 18.5	$ 188.4	$ 25.4	$ 19.5	$ 3,258.0
2009	$ 92.4	$ 29.4	$ 20.4	$ 26.1	$ 89.6	$ 3.2	$ 32.4	$ 62.1	$ 188.2	$ 51.7	$ 18.4	$ 187.8	$ 25.3	$ 19.4	$ 3,246.8
2010	$ 97.5	$ 31.0	$ 21.5	$ 27.6	$ 94.6	$ 3.4	$ 34.2	$ 65.6	$ 198.6	$ 54.5	$ 19.4	$ 198.2	$ 26.7	$ 20.5	$ 3,426.4

Table 40. GDPPC Tax $fGDP_{e+CO2}$, Stern SCC, 1980-2010.

	United State	United King	Spain	Russia	Netherlands	Japan	Italy	Germany	Canada	France	Austria	Denmark	Finland	Norway	Sweden
1980	10%	11%	12%	27%	28%	8%	9%	14%	20%	10%	43%	55%	67%	75%	41%
1981	9%	10%	12%	21%	27%	7%	8%	12%	18%	9%	41%	53%	65%	72%	39%
1982	8%	10%	11%	21%	26%	7%	8%	12%	18%	8%	40%	50%	61%	70%	37%
1983	8%	9%	11%	20%	25%	6%	7%	11%	17%	8%	38%	49%	60%	68%	37%
1984	6%	9%	10%	14%	24%	6%	6%	12%	15%	8%	40%	49%	60%	68%	37%
1985	6%	9%	11%	16%	24%	6%	7%	13%	15%	8%	40%	48%	60%	66%	37%
1986	5%	8%	10%	15%	23%	6%	6%	12%	15%	8%	39%	46%	59%	64%	36%
1987	5%	8%	10%	16%	23%	5%	7%	11%	15%	8%	40%	47%	58%	65%	36%
1988	5%	9%	10%	14%	24%	5%	7%	11%	16%	8%	40%	50%	58%	68%	37%
1989	5%	8%	10%	14%	23%	5%	7%	9%	15%	8%	40%	51%	56%	69%	38%
1990	5%	8%	10%	14%	23%	5%	7%	9%	15%	8%	38%	50%	58%	69%	37%
1991	5%	8%	10%	10%	24%	5%	7%	9%	15%	8%	40%	53%	65%	72%	39%
1992	4%	9%	11%	11%	26%	6%	7%	8%	16%	8%	44%	59%	76%	78%	44%
1993	4%	9%	11%	15%	26%	6%	7%	9%	16%	9%	45%	60%	78%	78%	46%
1994	5%	9%	11%	11%	26%	6%	8%	7%	16%	9%	44%	58%	77%	75%	45%
1995	4%	8%	11%	10%	25%	6%	7%	7%	16%	8%	44%	57%	75%	73%	43%
1996	4%	8%	10%	9%	24%	5%	7%	6%	15%	8%	43%	57%	74%	71%	44%
1997	4%	8%	10%	10%	23%	6%	7%	6%	15%	8%	42%	55%	70%	68%	43%
1998	5%	8%	10%	10%	24%	6%	7%	6%	15%	8%	41%	54%	66%	65%	42%
1999	4%	7%	10%	10%	23%	6%	7%	6%	14%	7%	40%	54%	64%	65%	41%
2000	4%	7%	10%	9%	23%	5%	7%	6%	14%	7%	40%	54%	64%	65%	40%
2001	5%	7%	10%	9%	23%	5%	7%	7%	15%	8%	41%	54%	63%	65%	41%
2002	5%	7%	10%	12%	24%	6%	8%	8%	15%	8%	42%	55%	63%	65%	41%
2003	6%	8%	11%	14%	26%	6%	9%	9%	16%	9%	44%	58%	65%	68%	42%
2004	6%	9%	12%	15%	27%	6%	10%	9%	17%	9%	45%	60%	67%	69%	42%
2005	6%	9%	12%	15%	27%	6%	10%	9%	17%	10%	46%	60%	67%	69%	42%
2006	8%	10%	14%	19%	29%	7%	11%	11%	19%	11%	46%	61%	67%	70%	42%
2007	5%	8%	12%	15%	26%	7%	10%	9%	16%	10%	44%	60%	64%	69%	41%
2008	6%	9%	12%	17%	26%	7%	11%	10%	17%	10%	44%	62%	65%	71%	42%
2009	1%	6%	7%	2%	21%	3%	6%	4%	10%	5%	40%	61%	65%	66%	38%
2010	1%	6%	8%	2%	22%	3%	6%	4%	10%	5%	42%	64%	66%	70%	38%

	Argentina	Australia	Belgium	Brazil	China	Chinese T	Columbia	Czech Rep	Greece	Hungary	India	Indonesia	Iran	Iraq	Korea
1980	20%	24%	33%	9%	32%	10%	18%	35%	29%	31%	11%	13%	22%	7%	34%
1981	19%	22%	32%	8%	27%	9%	16%	33%	28%	29%	10%	11%	19%	7%	30%
1982	19%	21%	31%	8%	22%	8%	15%	32%	27%	28%	9%	10%	20%	7%	27%
1983	18%	20%	31%	8%	20%	7%	15%	32%	28%	28%	9%	10%	19%	7%	25%
1984	16%	19%	31%	6%	16%	4%	14%	31%	27%	27%	7%	7%	14%	6%	22%
1985	18%	19%	31%	7%	16%	4%	14%	33%	27%	28%	7%	8%	16%	7%	22%
1986	16%	18%	30%	7%	14%	4%	14%	31%	27%	27%	7%	7%	16%	8%	20%
1987	17%	18%	30%	8%	14%	5%	13%	31%	29%	26%	7%	7%	18%	8%	19%
1988	19%	19%	31%	9%	18%	6%	14%	32%	30%	27%	8%	9%	19%	12%	19%
1989	18%	18%	30%	8%	13%	5%	13%	31%	29%	28%	9%	7%	17%	16%	18%
1990	18%	18%	29%	8%	19%	5%	12%	32%	29%	29%	8%	7%	16%	20%	17%
1991	17%	19%	31%	7%	16%	5%	13%	37%	30%	34%	6%	7%	14%	36%	16%
1992	17%	20%	34%	8%	9%	4%	14%	42%	33%	39%	6%	6%	15%	36%	17%
1993	17%	20%	35%	7%	9%	4%	13%	43%	35%	40%	6%	6%	16%	45%	17%
1994	17%	20%	35%	7%	8%	4%	13%	43%	35%	40%	7%	6%	17%	47%	17%
1995	17%	19%	34%	7%	8%	4%	13%	41%	35%	39%	7%	6%	15%	46%	16%
1996	16%	18%	34%	7%	7%	3%	12%	40%	34%	40%	5%	5%	12%	33%	14%
1997	16%	18%	33%	7%	7%	3%	12%	40%	33%	39%	6%	6%	13%	27%	14%
1998	17%	18%	33%	8%	8%	5%	13%	41%	33%	38%	7%	9%	17%	27%	17%
1999	17%	17%	32%	7%	7%	4%	13%	41%	32%	37%	6%	8%	15%	24%	15%
2000	18%	17%	33%	7%	7%	4%	12%	41%	32%	37%	6%	8%	15%	26%	14%
2001	19%	17%	33%	7%	8%	4%	13%	42%	31%	37%	6%	9%	15%	37%	14%
2002	23%	17%	34%	8%	10%	5%	14%	44%	31%	37%	7%	11%	19%	38%	13%
2003	25%	18%	36%	9%	12%	6%	15%	45%	32%	39%	9%	13%	28%	59%	15%
2004	25%	18%	37%	10%	12%	6%	15%	45%	33%	40%	10%	13%	32%	47%	16%
2005	24%	18%	38%	10%	13%	6%	15%	44%	33%	40%	10%	14%	33%	51%	16%
2006	26%	19%	40%	12%	18%	8%	17%	45%	34%	43%	12%	17%	38%	65%	17%
2007	20%	17%	37%	10%	12%	5%	14%	42%	31%	42%	8%	12%	29%	56%	14%
2008	20%	17%	39%	11%	13%	6%	14%	42%	33%	43%	11%	13%	34%	72%	16%
2009	9%	14%	31%	2%	0%	0%	7%	33%	28%	33%	0%	1%	5%	18%	7%
2010	8%	14%	32%	2%	0%	0%	7%	34%	31%	35%	0%	1%	5%	19%	7%

	Kuwait	Libya	Malaysia	Mexico	New Zealan	Nigeria	Poland	Portugal	Qatar	Saudi Arab	Soth Afric	Switzerland	Turkey	Venezuela	World-44
1980	131%	33%	45%	8%	83%	11%	24%	36%	529%	21%	11%	41%	13%	21%	18%
1981	152%	40%	41%	7%	79%	11%	22%	34%	540%	20%	10%	40%	12%	20%	17%
1982	166%	39%	38%	7%	74%	10%	21%	33%	578%	20%	9%	39%	11%	19%	16%
1983	154%	40%	36%	7%	72%	9%	20%	33%	612%	22%	9%	39%	10%	19%	14%
1984	147%	42%	32%	5%	71%	7%	20%	34%	555%	19%	8%	39%	9%	16%	14%
1985	160%	45%	34%	6%	73%	7%	22%	34%	652%	21%	9%	39%	10%	18%	13%
1986	149%	48%	33%	6%	72%	6%	20%	33%	637%	19%	9%	39%	9%	16%	12%
1987	145%	58%	33%	6%	74%	7%	18%	31%	652%	21%	9%	39%	9%	16%	12%
1988	160%	56%	32%	7%	77%	8%	17%	31%	646%	20%	10%	40%	9%	17%	12%
1989	128%	54%	30%	6%	78%	7%	19%	30%	630%	21%	9%	39%	9%	17%	12%
1990	149%	52%	27%	6%	78%	7%	19%	28%	739%	19%	9%	38%	9%	16%	12%
1991	271%	48%	26%	6%	85%	6%	21%	29%	820%	18%	9%	41%	9%	15%	12%
1992	206%	56%	27%	6%	96%	6%	22%	33%	865%	20%	10%	46%	9%	17%	13%
1993	158%	61%	26%	6%	92%	6%	22%	34%	886%	20%	11%	48%	9%	17%	12%
1994	150%	61%	25%	6%	89%	6%	21%	35%	883%	21%	10%	48%	10%	18%	12%
1995	144%	70%	23%	6%	87%	6%	19%	34%	866%	20%	10%	48%	9%	16%	12%
1996	145%	69%	20%	5%	86%	5%	17%	33%	825%	19%	10%	48%	8%	15%	12%
1997	146%	71%	20%	6%	84%	6%	16%	32%	648%	20%	10%	48%	8%	16%	11%
1998	143%	74%	23%	6%	83%	7%	15%	31%	594%	22%	10%	46%	9%	17%	10%
1999	147%	74%	22%	6%	80%	7%	15%	30%	573%	21%	10%	47%	8%	18%	10%
2000	146%	75%	21%	6%	81%	7%	15%	30%	535%	22%	9%	47%	9%	18%	11%
2001	145%	78%	21%	6%	79%	8%	15%	30%	518%	22%	10%	46%	9%	19%	11%
2002	146%	82%	23%	7%	78%	8%	16%	31%	493%	24%	10%	47%	9%	21%	10%
2003	135%	79%	25%	9%	79%	9%	17%	33%	500%	27%	11%	50%	10%	23%	11%
2004	132%	81%	25%	10%	80%	8%	17%	34%	436%	29%	13%	51%	11%	25%	12%
2005	125%	77%	26%	10%	81%	8%	18%	35%	418%	30%	14%	51%	11%	25%	13%
2006	127%	80%	28%	12%	82%	9%	19%	37%	364%	35%	15%	51%	13%	30%	13%
2007	119%	72%	24%	8%	80%	6%	16%	36%	293%	29%	13%	50%	11%	25%	13%
2008	120%	74%	25%	10%	83%	7%	17%	37%	240%	33%	13%	50%	11%	29%	15%
2009	105%	56%	13%	3%	76%	2%	9%	32%	213%	15%	7%	47%	5%	11%	13%
2010	108%	57%	13%	3%	78%	2%	9%	33%	194%	15%	7%	48%	5%	12%	14%

Appendix 3

Table 41. GDP in \$2005 U.S. Trillions and CO_2 emissions in Gigatons (metric tons), from projections for the four marker IPCC scenarios for 2020-2050.

	2020	2030	2040	2050
A1-AIM				
GDP	84.40	133.08	189.89	270.94
gtCO2	46.38	53.15	56.33	60.13
A2-ASF				
GDP	60.52	76.46	108.05	121.89
gtCO2	44.97	54.04	58.99	63.95
B1-IMG				
GDP	78.54	109.20	150.49	202.58
gtCO2	39.00	40.76	43.00	41.42
B2-MSG				
GDP	75.76	98.62	127.76	163.62
gtCO2	33.21	36.32	39.23	40.40

Table 42. GDP in \$2005 U.S. Trillions and CO_2 emissions in Gigatons for the business-as-usual BAU scenario for 2015-2050.

	2015	2020	2025	2030	2035	2040	2045	2050
BAU								
GDP	61.76	72.78	85.61	100.70	113.38	127.6494	143.7205	161.8148
gtCO2	36.00	40.00	43.00	45.00	48.00	50	52	55

Bibliography

E.D. Adamides, Y. Mouzakitis (2009). Industrial ecosystems as technological niches. Journal of Cleaner Production 17: 172-180.

R.C. Allen. The British Industrial Revolution in Global Perspective. Cambridge University Press, Cambridge, 2009.

K. Anderson, A. Bows. (2011). Beyond ‘dangerous’ climate change: emission scenarios for a new world. Philosophical Transactions of the Royal Society 369:20-44.

D. Anthoff and R.S.J. Tol (2013). The uncertainty about the social cost of carbon: a decomposition analysis using FUND. Climatic Change 117:515-530.

K. Arrow et. al (2004). Are I consuming too much? Journal of Economic Perspective 18: 147-172.

K.J. Arrow et. al. (2013). How Should Benefits and Costs be Discounted in an Intergenerational Context? Economics Department Working Paper Series No. 56-2013, University of Sussex.

R. U. Ayres. Resources, scarcity, technology and growth. In: R.D. Simpson, M.A. Toman, R. U. Ayres, Eds. Scarcity and growth revisited: Natural resources and the environment in the new millennium. Washington D.C., 2005.

R. Bansal, M. Ochoa (2011). Temperature, Aggregate Risk, and expected returns. NBER Working Paper Series, 17575.

Y. Bar-Yam (1997). Complexity Rising: From Human Beings to Human Civilization, a Complexity Profile, in Encyclopedia of Life Support Systems, United Nations, Oxford, UK, 2002.

I.Bashmakov (2007). Three laws of energy transitions. Energy Policy 35: 3583-3594.

J. H. Brown et.al (2011). Energetic Limits to Economic Growth. BioScience 61: 19-26.

K.E. Boulding (1959). Foreward, In: Malthus, T.R. (Ed.), Population: The First Essay. University of Michigan Press, Ann Arbor, pp. v-xii.

J.H.Brown, et. al. (2014). Macroecology meets macroeconomics: Resource scarcity and global sustainability. Ecological Engineering 65: 24-32.

C.M. Cipolla. The Economic History of World Population. Pelican Books, London, 1962.

C.J. Cleveland (1992). Energy quality and energy surplus in the extraction of fossil fuels in the U.S. Ecological Economics, 6: 139-162.

C.J. Cleveland. (2013). Net Energy Analysis. Online, accessed January 2015.

M. Dell, B.F. Jones, B.A. Olken (2012). Temperature Shocks and Economic Growth: Evidence from the Last Half Century. American Economic Journal: Macroeconomics 4(3): 66-95.

S. Dietz, N. Stern (2008). Why Economic Analysis Supports Strong Action on Climate Change: A Response to the Stern Review's Critics. Review of Environmental Economics and Policy 2(1): 94-113.

R. Fouquet. A Brief History of Energy. J. Evans, L.C. Hunt (Eds.), International Handbook of the Economics of Energy, Edward Elgar Publications, Cheltenham, UK, (2009).

R. Fouquet and P. J. G. Pearson (2012). Past and prospective energy transitions: insights from history. Energy Policy 50:1-7.

R. Fouquet (2014). Long-run Demand for Energy Services: Income and Price elasticities over two hundred years. Review of Environmental Economics and Policy 8 (2) 186-207.

N. Gagnon, C.A.S. Hall, L. Brinker (2009). A preliminary investigation of energy return on energy investment for global oil and gas production. Energies 2009 (2):490-503.

M. Greenstone, E. Kopits, A. Wolverton. (2011). Estimating the Social Cost of Carbon for Use in U.S. Federal Rulemakings: A Summary and Interpretation. Working Paper 16913.

A. Grubler (2004). Transitions in Energy Use. Encyclopedia of Energy 6: 163-177.

M.C. Guilford, C.A.S. Hall, P. O'Connor, C.J. Cleveland (2011). A new long term assessment of energy return on investment (EROI) for U.S. oil and gas discovery and production. Sustainability 3: 1866-1887.

A.K. Gupta, C.A.S. Hall (2011). A Review of the Past and Current State of EROI Data. Sustainability 3: 1796-1809.

B. Hope (2011). The PAGE09 Integrated Assessment Model: A Technical Description. Cambridge Judge Business School Working Paper No. 4/2011.

A. Kander, D.I. Stern (2014). Economic growth and the transition from traditional to modern energy in Sweden. Energy Economics 46:56-65.

C.W. King (2010). Energy intensity ratios as net energy measures of United States energy production and expenditures. Environmental Research Letters 5(4) 044006.

C.W. King, C.A.S. Hall (2011). Relating Financial and Energy Return on Investment. Sustainability 3:1810-1832.

C.W. King, J.P. Maxwell, A. Donovan (2015, submitted). World economy-wide energy expenditures and net energy metrics.

B. Litterman (2013). What is the Right Price for Carbon Emissions? Regulation 36(2): 38-43.

P.J. Loftus, A.M. Cohen, J.C.S. Long, J.D. Jenkins (2015). A critical review of global decarbonization scenarios: what do they tell us about feasibility? Climate Change 6:93-112.

I.W.R. Martin, R.S. Pindyck (2014). Averting Catastrophes: The Strange Economics of Scylla and Charybdis. Draft.

J. P. Maxwell (2013). Energy Intensity Ratios as Net Energy measures for selected countries 1978-2010.

D.J.R. Murphy, C.A.S. Hall, C.J. Cleveland. (2011). Order from Chaos: A preliminary protocol for determining EROI for fuels. Sustainability 3: 1888-1907

D. J. Murphy and C.A.S. Hall (2011b). Energy return on investment, peak oil, and the end of economic growth in "Ecological Economics Reviews." R. Costanza, K. Limburg & I. Kubiszewski, Eds. Annals of the New York Academy of Sciences 1219:52-72.

R. P. Murphy, Institute for Energy Research, Written Testimony before the Senate Committee on Environment and Public Works on The Social Cost of Carbon: Some Surprising Facts. 2013.

J.C. Nekola et al. (2013). The Malthusian-Darwinian dynamic and the trajectory of civilization. USGS Staff- Published Research. Paper 714.

W.D. Nordhaus (2006). The "Stern Review" On the economics of climate change. NBER Working Paper Seires, 12741.

W.D. Nordhaus (2010). Economic aspects of global warming in a post-Copenhagen environment. Proceedings of the National Academy of Sciences 107(26):11721-11726.

W. Nordhaus (2011a). Estimates of the social cost of carbon: background and results from the RICE-2011 Model. Cowles Foundation Discussion Paper No. 1826.

W. D. Nordhaus (2011b). Integrated Economic and Climate Modeling. Cowles Foundation Discussion Paper No. 1839.

W. Nordhaus. DICE-2013R Model. Online, accessed January 2015.

R.S. Pindyck. (2012). Uncertain outcomes and climate change policy. Journal of environmental economics and management 63:289-303.

R.S. Pindyck (2013). Climate change policy: what do the models tell us? NBER Working Paper Series, 19244.

R.S. Pindyck and N. Wang (2013). The Economic and Policy Consequences of Catastrophes. American Economic Journal: Economic Policy 5(4): 306-339.

C. M. Reinhart, K. S. Rogoff. This Time is Different: Eight Centuries of Financial Folly. Princeton University Press, 2010.

N. Stern. The Economics of Climate Change: The Stern Review, Cambridge University Press, Cambridge and New York, 2006.

N. Stokey. (1998). Are there limits to growth? International Economic Review 39: 1-31.

J.A. Tainter. The Collapse of Complex Societies. Cambridge University Press, Cambridge, 1988.

J.A. Tainter (2011). Energy, complexity, and sustainability: A historical perspective. Environmental Innovation and Societal Transitions 1: 89-95.

D. Tilman et. al (2002). Agricultural sustainability and intensive production practices. Nature 418:671-677.

G.E. Tverberg (2012). Oil supply limits and the continuing financial crisis. Energy 37: 27-34.

M.L. Weitzman (2009). Additive damages, fat-tailed climate dynamics, and uncertain discounting. Economics: The Open-Access E-Journal 3: 39.

Bureau of Labor Statistics. Consumer Price Index, online; accessed January, 2015.

EIA, International Energy Statistics, online; accessed 2014.

EIA. Annual Energy Review 2010. Table 1.5: Energy Consumption, Expenditures, and Emissions Indicators Estimates, 1949-2011. Online, accessed January 2015.

IEA. Energy Technology Perspectives 2010: Scenarios and Strategies to 2050. Paris, France: Organization for Economic Cooperation and Development / International Energy Agency; 2010.

IEA, Online Data Services. http://data.iea.org/ieastore/statslisting.asp. Accessed 2013.

IEA. World Energy Outlook 2010. Paris, France: Organization for economic Cooperation and Development / International Energy Agency; 2010.

IEA. World Energy Statistics: Documentation for Beyond 2020 Files. 2014 Edition.

Intergovernmental Panel on Climate Change (IPCC), Climate Change 2007(a): The Physical Science Basis, Cambridge University Press, 2007.

IPCC Climate Change 2007(b): Impacts, Adaptation, and Vulnerability, 2007.

IPCC Climate Change 2007(c): Mitigation of Climate Change, 2007.

IPCC Data Distribution Center, online; accessed January 2015.

OECD. Medium and Long-Term Scenarios for Global Growth and Imbalances, in OECD Economic Outlook, Volume 2012/1.

U.S. Government, Interagency Working Group on Social Cost of Carbon. Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866.

World Bank. World Development Indicators. GDP (constant 2005 US$). Online, accessed 2014.